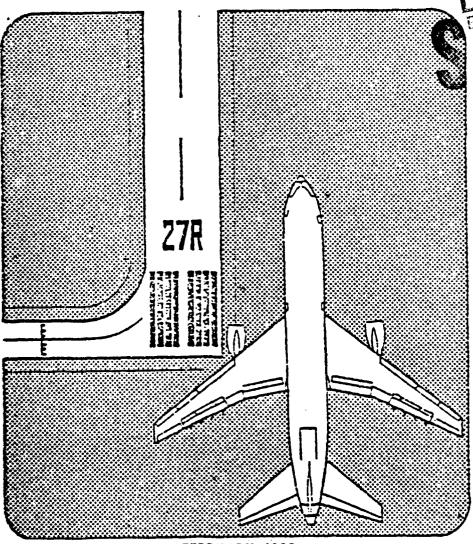
FEDERAL AVIATION ADMINISTRATION TECHNICAL CENTER ATL--ETC F/6 1/2 MIAMI INTERNATIONAL AIRPORT DATA PACKAGE NUMBER 5, AIRPORT IMPR--ETC(U) AD-A099 966 FEB 80 UNCLASSIFIED NL 1 or 2 ^549966



MIAMI INTERNATIONAL AIRPORT

DATA PACKAGE NO. 5
AIRPORT IMPROVEMENT
TASK FORCE DELAY STUDIES



FEBRUARY 1980

81 6 08 141

DITE FILE COLY

(1)11-

(() Miami international airport.

DATA PACKAGE MONTS

MIAGI

AIRPORT IMPROVEMENT JASK FORCE DELAY STUDIES,

Prepared by:

ANALYSIS BRANCH, ANA-220
NATIONAL AVIATION FACILITIES EXPERIMENTAL CENTER
ATLANTIC CITY, NEW JERSEY 08405

411863 2-

TABLE OF CONTENTS

Item	Description	Pase
1	Attachment A - Simulation Model Calibration Output Data	A-1
2	Attachment B - Confidurations A and B Model Input Data	B-1
3	Attachment C - Miami Delay Experiments - Stage 1 and Stage 2	C-1
4	Attachment D - Experimental Results - Miami Stage 1 Delay Experiments	D-1

Accession For
NTIS GRA&I
DTIC T'B
Unary worded 🗂
Justilian tion
Py
Distribution/
Availability Codes
Av il and/or
Dist Special

LIST OF TABLES

Table	Description	Page
1	Hourly Comparision of Output Data for Simulation Model Calibration	A-3
2	Aircraft Separations - 1978 VFR1, Easterly Configuration	B-15
3	Aircraft Separations - 1978 IFR1, Easterly Configuration	B-17
4	Aircraft Separations - 1978 IFR2, Easterly Configuration	B-19
5	Aircraft Separations - 1978 VFR1, Westerly Configuration	B-34
6	Aircraft Separations - 1978 IFR1, Westerly Confiduration	B-36
7	Aircraft Separations - 1978 IFR1, Two Mile In-trail Stassered Parallel Approaches, Westerly Confisuration	8-38
8	Miami Delay Experiments - Stage 1	C-2
9	Miami Delay Experiments - Stase 2	C-3
10	Set 1 Demand: VFR Easterly Flow	D-3
11	Experiment 1 Results	D-5
12	Experiment 7 Results	D-7
13	Set 2 Demand: IFR Easterly Flow	D-11
14	Experiment 4 Results	D-13
15	Experiment 34 Results	D-18
16	Experiment 6 Results	p-23

LIST OF TABLES (Continued)

Table	Description	Pade
17	Set 3 Demand: VFR Westerly Flow	D-27
18	Experiment 2 Results	D-29
19	Experiment 8 Results	D-31
20	Experiment 3 Results	D-36
21	Experiment 38 Results	D-41
22	Set 4 Demand: IFR Westerly Flow	D-48
23	Experiment 5 Results	D-50
24	Experiment 39 Results	D-55
25	Experiment 24 Results	D-60

LIST OF ILLUSTRATIONS

Figure	Description	Pade
1	Miami Arrival Flow Rate	A-4
2	Miami Departure Flow Rate	A-5
3	Miami Arrival Air Delay	A-6
4	Miami Arrival Travel Times	A-7
5	Miami Departure Travel Time	A-8
6	Miami Easterly Configuration	B-3
7	Miami Westerly Configuration	B-23
8	Miami Link-Node Diagram - 1978 Configuration	B-41
9	VFR1 East Comparison: 1978/1983 Demand	D-8
10	VFR1/IFR1 East Comparison: 1978 Demand	D-14
11	IFR1 East Comparison: 1978/1983 Demand	D-19
12	IFR1/IFR2 East Comparison: 1978 Demand	D-24
13	VFR1 West Comparison: 1978/1983 Demand	D-32
14	VFR1/VFR2 West Comparison: 1978 Demand	D-37
15	VFR2 West Comparison: 1978/1983 Demand	D-42
16	VFR1/VFR2 West Comparison: 1983 Demand	D-45
17	VFR1/IFR1 West Comparison: 1978 Demand	D-51
18	IFR1 West Comparison: 1978/1983 Demand	D-56
19	IFR1 West Comparison: 1978 Demand with Two Mile In-trail Stassered Parallel Approaches	D61

Attachment A

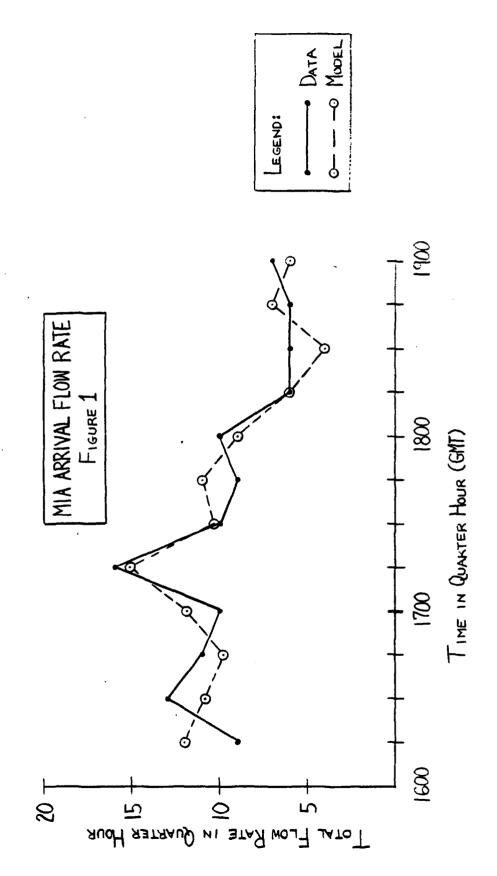
SIMULATION MODEL CALIBRATION OUTPUT DATA

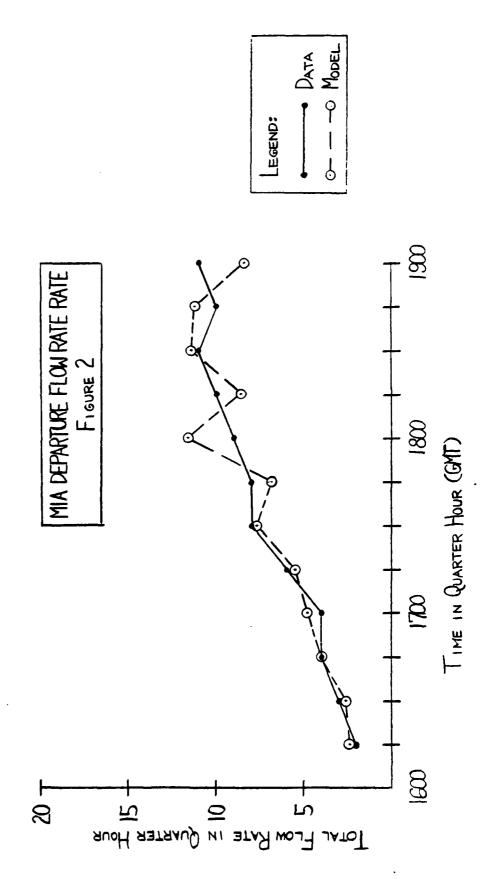
This section presents the final calibration output for Miami by showing comparisons between it and the field-data from which the calibration input schedule was derived.

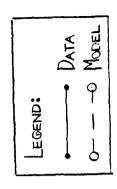
Table 1 summarizes the flow rates, delays, and travel times on an hourly basis. Figures 1-5 show the results plotted on a quarter-hour basis.

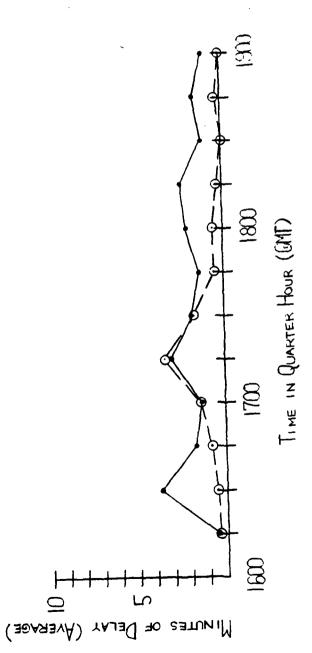
Table 1
Hourly Comparison of Output Data
for Simulation Model Calibration

	Arrival	Departure Flow Rate
	Flow Rate (a/c per hour)	(a/c per hour)
	(a)c per nour)	(a) C Pel Hodi)
Time (GMT)	Data Model (S.D.)	Data : Model (S.D.)
1600-1700	43.0 44.6 (0.52)	13.0 ; 13.8 (0.42)
1700-1800	45.0 45.4 (0.52)	31.0 31.6 (0.70)
1800-1900	25.0 23.0 (0.00)	42.0 39.6 (0.52)
	Averase Arrival	Averase Fix to
	Air Delay	Threshold Travel
	(min.)	Time (min.)
Time (GMT)	Data : Model (S.D.)	Data : Model (S.D.)
1600-1700	1.97 0.77 (0.09)	12.56 9.36 (0.09)
1700-1800	2.29 1.79 (0.12)	
1800-1900	1.55 : 0.19 (0.03)	
	Average Arrival	Averase Departure
	Threshold to Gate	
	Travel Time (min.)	Travel Time (min.)
Time (GMT)	Data Model (S.D.)	Data Model (S.D.)
1600-1700	2.43 : 3.19 (0.07)	5.91 4.58 (0.36)
1700-1800	3.13 3.12 (0.09)	
1800-1900	2.92 2.81 (0.09)	5.91 : 5.64 (0.11)

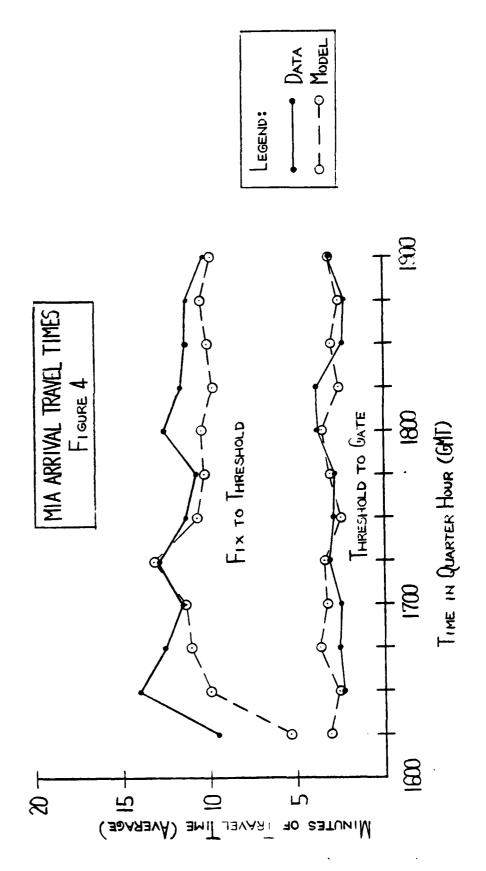


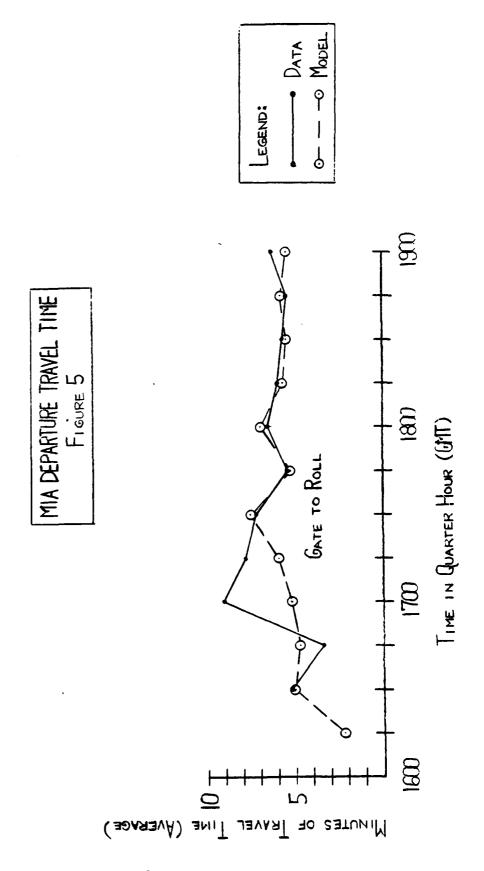






MIA ARRIVAL AIR DELAY FIGURE 3





Attachment B

CONFIGURATIONS A AND B MODEL INPUT DATA

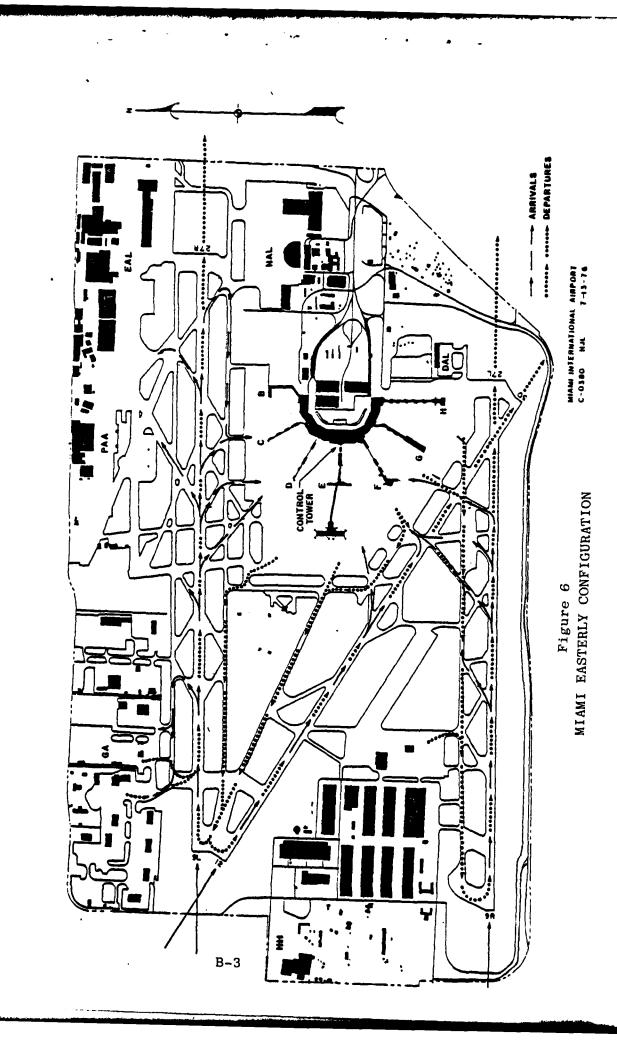
This section presents the Airfield Simulation Model input data as applied to the experiments in this report. Variation of the inputs controlled the experiments to reflect the desired conditions of each test.

Primarily, aircraft demand schedules (1) and separations were varied in accordance with the runway configuration, weather and ATC System scenario of each experiment.

The basic Configuration A (easterly) and Configuration B (westerly) model input data follows. Aircraft separations are listed under each configuration for all conditions used in the experiments.

Figure 8 closes this section, showing the link-node diagram used to develop the route structure for each experiment.

⁽¹⁾ See Miami Data Packase No. 4 for demand schedule summaries.



CONFIGURATION A MODEL INPUT DATA

SEPAR=78VFR1 DEKAND=78	40961 15011 03661		F1 F2		ACTIVE PUNUAY 1. ON FINAL 30. 30. 1. ON FINAL 33. 30.	30. 50. 1 04 FINAL 1 04 FINAL 1 04 FINAL 1 04 FINAL	L OK FINAL 30. 30. 1 ON FINAL 30. 30.
PIANI INTER. AIRPORT EXPER1 ROUTES=1978 CONFIG=A SEPAR= Rumper of Random Numher Seeds	10 RANDGR NUMAFR SEEDS - 92651 91921 69311 92157 14577 10493 27011 START TIME AND FINISH TIME	PRINT OPTIONS F F F F F F F F F F F F F F F F F F F	AIRLINE CODES IA EA DD FF GG HH C1 C F3 F9 IT OT JF PT GA NUMARR OF RUNNAYS	B RUMLAY WAMES P OR 9L 12 RUMLAY EMD LINX NUMBERS	412 437 421 RUMMAY CROSSING ACE TIMES FOR A/C CROSSING AC XNG LINK RUMMAY ARRIVAL ON R/W DEPAPTURE ON R/W APRIVAL (198 2 27, 38, 33, 30, 20, 22, 22, 25, 30, 30, 30 XNG LINK RUMMAY ARRIVAL ON R/W DEPAPTURE ON R/W APRIVAL (2 87, 51, 55, 66, 41, 44, 46, 54, 30, 30, 30 XNG LINK PUMMAY ARRIVAL ON R/W DEPAPTURE ON R/W APRIVAL ON R/W APRIVAL (2 87, 51, 55, 66, 41, 44, 46, 54, 30, 30, 30, 30, 30, 30, 30, 30, 30, 30	K RUNLAY ARRIVAL ON R/W DEPARTURE ON R/W ARRIVAL K RUNLAY ARRIVAL ON R/W DEPARTURE ON R/W ARRIVAL 3 33. 16. 42. 44. 30. 32. 33. 37. 30. 30. 31. 30. 32. 33. 37. 30. 30. 32. 33. 37. 30. 30. 32. 33. 37. 30. 30. 30. 30. 32. 33. 37. 30. 30. 30. 30. 32. 33. 37. 30. 30. 30. 30. 30. 30. 30. 30. 30. 30	K RUNMAY ARRIVAL ON R/W DEPAPTURE ON P/W ARRIVAL 3 55. 59. 65. 73. 48. 52. 56. 66. 30. 30. K RUNMAY ARTIVAL ON R/W DEPAPTURE ON R/W ARRIVAL K RUMMAY ARTIVAL ON R/W DEPARTURE ON R/W ARRIVAL K RUMMAY ARTIVAL ON R/W DEPARTURE ON R/W ARRIVAL K RUMMAY ARRIVAL ON R/W DEPARTURE ON R/W ARRIVAL ON R

RUNNAY CROSSING LINESOCCUPANCY TIPES (SECS)	
55	
20.00	
3 26.00	
	:
B-	
5	

The second second second

12.0 YERSUS DISTANCE) 12.0 YIP 3630.0 12.0 272 6650.0 19.0 121 7590.0	N
	TO THE EXIT TAXIWAY (EXIT 282 284 4799.0 273 280 5992.0 273 286 6499.0 282 296 9292.0 296 9292.0 200 9292.0 200 9292.0 200 9292.0 200 9292.0 200

110 10 10 110 110 110 110 110 110 110 1	XILAY TEO-UAY P	PATHS	:				}
17 17 17 17 17 17 17 17	295 372						
110 210 211 212 212 213 220 214 215 210 211 210 211 212 212 213 220 214 215 210 211 212 212 213 220 214 21 215 210 211 210 211 212 212 213 220 214 21 212 211 212 212 213 220 214 21 212 211 214 21 212 213 214 214 21 212 211 214 21 214 214 214 2	~						į
10 10 10 10 10 10 10 10	92					•	
13 17 18 18 18 18 18 18 18	۰ ۲		†				
13 15 15 15 15 15 15 15							1
259 259 259 259 259 259 259 259 259 259	21.3	,					į
10 10 10 10 10 10 10 10	37.E						
197 363 389							1
197 163 184 185	·	:					ļ
15	291	363					ļ
182 316 115 183 305 530 184 245 240 185 240 247 245 240 247 246 245 240 247 240 240 248 240 240 249 240 240 240 245 240 240 240 250 240 117 116 359 240 117 116 359 240 117 116 357 240 117 116 357 241 117 322 310 241 117 322 222 222 250 271 272 221 232 314 250 271 272 272 272 272 272 270 272 272 272 273 273 274 274 274		382					
19 245 248 249						,	}
1		1					1
197 362 244 245 244 245		1					i
197 362 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247 246 247	94	244					ļ
245 240 247 247 249 241 375 249 241 375 249 241 375 249 241 375 249 241 375 249 241 375 249 241 375 249 241 249 241	n 19	i					
1	a a	246					
11	* (•	
117 118 253 126 172 171 356 266 150 168 107 106 529 150 107 108 529 151 116 352 117 118 353 152 120 221 222 223 224 389 153 116 117 352 121 220 374 154 117 118 352 221 220 374 155 118 117 366 513 385 526 165 119 117 366 513 385 526							1
56 172 171 358 266 56 172 171 358 266 56 168 107 106 529 56 167 106 529 56 107 106 520 55 107 108 350 17 116 357 16 117 116 353 17 116 353 17 116 353 17 116 353 17 116 353 17 116 353 17 116 353 17 220 206 205 17 212 213 314 17 212 221 222 17 17 364 513 385 16 17 146 373 148 143 143		R t t	565				;
172 171 358 266 55	7		244				;
5 10 10 10 10 529 5 10 10 10 528 5 10 10 10 10 528 6 10 10 10 55 10 10 115 7 10 20 20 20 20 20 20 20 20 20 20 20 20 20	ر چ	171	358	266			
5 10.7 10.8 35.0 52.8 15 116 35.2 117 118 35.7 15 116 35.2 110 115 15 116 35.2 110 115 15 116 35.2 110 115 17 20.9 20.7 20.6 20.5 38.0 17 21.0 21.1 37.7 21.2 21.3 37.6 17 20.0 20.2 20.3 22.4 38.9 17 20.0 20.2 21.3 37.6 10 21.1 37.7 21.2 21.3 37.6 10 10 10 10 37.3 10.5 10 10 10 10 37.3 10.5 10 10 10 10 37.3 10.8 10 10 10 10 37.3 10.8 10 10 10 10 37.3 10.8 10 10 10 10 37.3 10.8 10 10 10 10 37.3 10	50	101		529			
5 146 143 142 15 116 352 117 118 357 17 269 208 2C7 206 205 205 380 17 220 221 222 223 224 389 17 210 211 377 212 217 376 18 27 220 374 19 274 227 227 220 374 19 274 227 227 227 320 374 10 140 140 147 146 373 145 144 143 142	n 0		350	528			
15 116 352 117 118 353 15 117 352 116 115 179 2C9 208 2C7 206 205 380 179 220 221 222 223 224 389 179 210 211 376 376 179 220 221 213 376 179 221 222 221 374 170 211 377 212 213 374 160 176 177 386 513 385 526 160 160 167 146 373 145 144 143 142	٠ د د	144	143	142			
11	, 6 15	352	117	118	351		1
7 269 208 2C7 206 205 380 174 220 221 223 224 389 179 210 211 377 212 213 376 179 220 221 220 374 189 223 227 221 220 374 160 140 177 386 513 385 526 160 140 147 146 373 145 143 142	• • • •		352	116	115		ì
17 220 221 224 389 17 212 213 376 17 212 213 376 18 221 222 221 376 18 17 17 386 513 385 526 16 160 160 167 146 373 145 143 142	70	i I	207	206	205	310	:
7 210 211 377 212 213 376 7 224 223 222 221 220 374 5 175 176 177 386 513 385 526 16 16 14 147 146 373 145 144 143 142		221	ŀ	223	224		
7 274 223 222 221 220 374 5 175 176 177 386 513 385 526 16 149 148 147 146 373 145 144 143 142		211		212	213	376	į
554 175 176 177 386 513 385 526 10 169 148 147 146 373 145 144 143	7 2 2 2		222	122	220		į
16 169 168 147 146 373 145 143 143	5.4	176	177	386	513		
16	9 4			7 4 5			:
	9 9			0	27.5	144	

377 208 209 207 208 209 356 377 211 210 177 386 513						•													The second secon
211 — 213		235	377	207				-					•						
211 - 215 379 - 209 208 246 207 248 209 379 376 212 370 211 210 379 380 177 176 175 176 177 386 513 385		208				526			•						1			!	;
211 213 379 209 208 211 213 379 209 212 213 214 210 310 310 310 201 312 312 317 211 210 310	207	!	379	379			i;			٠					•			:	
211 213 212 213 212 217 376 207 376 207 376 313 386 117 317	09. 208	1															‡- - - - -		
C12		210			356										i I		ı		1
	612;		376		172	176									•				:

DELAY EVA									
-OFF QUEUE S	FIX DELAY EVALUATION LEVEL. TAKE-OFF QUEUE SHITCH FOR RUNWAY	HOLOING PC		INUM VECTORING DELAY KINIMUM HOLDING DELAY E PUNNAYS ARE 6 0 0	VG DELAY	KINIKUK H	OLDING	DELAY	
OFF OUFUE S	TAKE-OFF OUFUE SULTCH FOR RUNNAY	2 = 99	ALTERNATE	E RUNHAYS ARE	0	0	0	0	
OFF QUFUE S	TAKE-OFF QUFUE SUITCH FOR RUNNAY 3 = 99		ALTERNATE	E RUNHAYS ARE	0	0	0	0	-
GATE HOLD LIMIT =	= 8 HOLD TIPE =	.50							
HOLD LIMIT	GATE HOLD LIMIT = 8 HOLD TIME =	.50							
GATE HOLD LIMIT =	= 8 HOLD TIME =	• 50							
AIRSPACE DELAYS									
OCCURFICE NEPARTURE RU	FIX OCCURFICE PERCENTAGE HOLD MEAN HOLD SIGNA	HOLD MEAN HOLD	HOLD SIGNA CONDS (AZC CI	CLESSE KEANE AND STOR DEVAL	AND STD. C	JEV.)			
1 39.00	00.								• !!
20.00	99.4								
H-AND-6" RUNL	4	"E IN SECOND	1376 CL	CLASSE MEANE AND STOR DEVAL	AND STD DI	EY.1			
0.00	00.0								
3 0 0 0									
00.0	ĺ								

Augustus est au l'anni de la constitution de la con

· __:

								•		-		6 Nuchahir 1188									•					
39.	*0#	29.	31	39.	19.	26.	. 07	21.	26.			ZC CLASS AND BY EACH RUNGAY SEXIT LINK NA. WED CHIS	1.00		89.8	•89		1,000	.97			1.00		1,00	,	
3731	=		30	-	1831	24. 1.00	9		24. 1.00			AY EACH RUN	.95 272.		272 272 e	.82 316.		. 497 . 296.	.88 287.	0 0 0		.93 293.		.90 323.		
. 16	96.	.16	55	£ 0·	•16	98	7.5	. 55	. DEV.)			C CLASS AND	178.	-	178	178.	 	2874	302.	000	670	290.		284.		
36.	5.	26.	30.	35.	17.	23.		17. 20.	23. MEANS_STD.	٠			æ			11.		.93	.79		7 .	.86		980		•
70	.93	.67	50	. 63	.00	93		.50	CL ASS. ME			PERCENTAGE BY EACH A	27.0		280.	321.		298	259.		7,07	259.		282.		
36	3.5	24.	30	33.	16.	23.		20.	22. .(A/C			IGE PERCE			1.00	1.56		. 80	.65	•		.79	1.00	60	1.00	
. C2 3e . 07 36.		• 62	45	.84	• 62	. 48. 		2 4	=	00	00.	10.00 5.00 SELECTIONUSAGE	273		270.	319.		290.	293.	!		302.	121.	121.	121.	
31.	12.	21.	. 29.	32.	14.	23.		23.	22	00.00	130.00		RUY 1	À 110	0.00	. RWX . E.— .37	3	RUY	RWY 2	1.00 RWY 2		.72	•	75 V	RWY 3	
CLASS 1	200	CLASS 2	04.	60.	i Li	69	CLASS 4	000	A/C APPROACH	•		RUNEAY EXIT	-		, w. o.	CL ASS _3.8 270*	- :	CLASS 1 F	CL 45 S 2 R		203.	329.		~ .	CLASS 3 F	

• _____

يدان ه

-			
6649.2. 48.00 8052.0 58.00	35.00 4972.0 44.00 48.00 61*0.0 52.00 60.00 7589.0 64.00 35.00 3530.0 40.00 53.00 5732.0 56.00 60.00 7590.0 66.00	43.00 4222.0 54.00 70.00 6702.0 75.00	
51.00 6140.0 52.00 64.00 7590.0 55.00	55.00 4799.0 35.00 49.00 5992.0 49.00 77.00 6983.0 60.00 77.00 2682.0 35.00 49.00 5110.0 53.00 64.00 6980.0 60.00	2682.3 5992.0 5.60 8 VERSUS	
.0 54.00 5992.0 .0 48.00 6980.0	.0 47.00 4400.0 .0 47.00 5769.0 .0 51.00 6702.0 .0 59.00 2473.0 .0 55.00 4972.0	0.0 22.00 2470.0 0.0 66.00 5769.0 00 20.00 25.00 10N IN MIMUTES (RAM)	
CLASS 1 40.00 5110.0 54.00 5992.0 51.00 4972.0 64.00 6702.0 48.00 6980.0 64.00 9200.0 5900.0 6980.0 64.00		CLASS 4 24.60 1232.0 22.00 2470.0 37.00 4799.0 59.00 5732.0 66.00 5769.0 68.00 12411NG SPEEDS IN MPH 5.00 20.00 25.00 30.00 A/C LATENESS DISTRIBUTION IN MIMUTES (RANDON NUMBE	09.0

AGE SPEED
186.20
186.00
180.00
180.00
196.00
196.00
196.00
196.00
196.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00
180.00 180.00 180.00 180.00 180.00 180.00 180.00 180.00 1180.00 1180.00 1180.00 1180.00 1180.00 1180.00 1180.00 1180.00 OTST. 25.50 25.50 25.50 25.50 25.50 25.50 33.50 CLASS TRAVEL TIMES

ala a la mina in a jo a je i-



A/C SEPARATIONS

DENOCHALIST ALIO ERITVER / ILP ARRIVAL . DE PARTITOE 128 SEPARATION VALUES IN 9 SETS OF 32, ARRIVAL / APRIVAL, DEPARTURE / EACH SFT OF 32 IS COMPOSED OF 16 PAIRS OF REAN AND STANDARD DEVIATION THE 16 SFTS ARE POSSIBLE WAYS OF AZC CLASS X FOLLOWED BY AZC CLASS Y THERE ARE & AZC CLASSES -- 1 ? D CLASS

C CL455 ORDER OF SETS OF (X+Y) IS !

TRAIL A/C FIY

TRAIL ACC RUNNAY

LEAD AZC FIX D

128 SEPARATION VALUES IN <u>4 SETS OF 32 A A (N. KILES), DAA (N. KILES), DAD (MINITER) AMP "AP (FINITES)</u> 9-13 -70 5-03 65 80.00.0 5000 . 50 -18 0000 777 D.CO C.CO .58 2.92 1.22 2.00 .63 09. 52.22 °03 3000 0000 87. 3 3.68 3.96 3.08 2.03 .58 0.00 0.00 0.00 0.00 1.69 1.47 ... 00000 03-0 -14 0.60 0.00 8UNHAY . 1 £ 0. 0.00 3.25 **C:** :3 1.00 1.1.1 B-15

LEAD

(winter) ANE AAN AKITTE'S (NeKTIFS). n/n 0.00 0-00 80. 0.03 -1 £0. 1 0000 1.40 .58 .58 .83 (N.KILES). .. 00.0 00.0 .12 0.00 ٠ ج .08 32. A/A 00000 1.69 .58 . 2.00 .83 LEAD A/C FIX SETS OF 0 0 0 0 0 0 0 0 0 0 0 0 0 .13 **e** 5 0,00 .08 £5. ٠. ٢. ۳. . . 1.5 1.00 * 1. 72 128

TABLE

1978 VFR1, EASTERLY CONFIGURATION AIRCRAFT SEPARATIONS

0	2000 200 200 200 200 200 200 200 200 20		00000000000000000000000000000000000000		20000000000000000000000000000000000000	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	TPAIL A/C FIX 0 • D/O (KINUTES) AND A/O (KINUTE**) **PAIL A/C FIX 0 • D/O (KINUTES) AND A/D (KINUTE**)
333030	:	00.0 00.0 00.0 00.0 00.0 00.0 00.0 00.		370700	.		00.00	
ٽ <i>و</i> . ڏ	6.00				!	0.00	00.00	(continued)

TABLE 3

AIRCRAFT SEPARATIONS 1978 IFR1, EASTERLY CONFIGURATION

•

:				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1										***************************************																						•		-			-
AND AZD CHINUTES)				a er er er manne menter er er fra er					:		The state of the s		AND A CO CHINUTES			1												AND A 7 D THINDTES!						The second secon							
T T TRAIL AZC FIX D (N.MILES), DZD (MINUTES) AC 0.00	00.00	0000	. 11	11.	.11	11.			80.	•16	.14	.18	N.HILES). D/D (HINDTES)	.50	.50		05.		0.00	00.00	0.00	00.0		0.00	00.0	200.0	~	ATLEST, D/D TMT NUTEST	. 50	• 50	.50	0.00	00.0	00.0	0.00	00.0	00.0	00.0	00.0	0.00	00.0
TKAIL A/C RUNNAY (N.41LFS), D/A (0.00 0.00	,	~	~	2.60	, . 	• ~	7			24 80	RAIL A/C PUNHA N.HILES), D/A	7.43	· v	.50 4.13	4	9 9		•		0.00	00.00 00.00	6	0.00 0.00		œ	TN:MTEEST; 0/A 1N	60	4 09	,	֓֟֟֝֟֝֟֟֟֓֟֟֟֓֟֟֓֟֟֟֓֟֟֓֟֟֓֟֓֟֟֓֟֓֟֟֓֟		P		0.00 0.00	֓֟֝֟֝֟֝֟֓֓֓֓֟֟֓֓֓֓֓֟֓֓֓֓֟֓֓֓֓֓֟֓֓֓֓֟֓֓	0.00 0.00	0	9	00.0
ETS UF 32; A/A (0	0.00 0.00	- m	m		2.60		200	-		•	24 80	/C FIX 0	5 7.59		4.2	1	. 00.00					90.	00.		00.	/C FIX 0	=	.65 5.39		65 4.29	00		.00	00.	00.00			•0000•	.00	00.0 00.0
3 LEAD VALUES 14 4 S	0.00	00.00	09.7	 •	•	7.60	!		.64 1.03		•	24 . 80	Z LEAD	70 6.57	4.37	4.37	4.37	00.0	0.00	0.00	00.00	0.00	00.00	00.0	00.00	0.00	r 3 LEAD A	74 6-57	*		4.37	00.0	00.0	00.00	00.00	00.0	00.0	00.0	00.00	0.00	0.00
LEAD AZC NUNARY 128 SEPARATION V.	040	00.0		[9.	• 1.0	09.2	0.00		1.00		1	80	C. PUNG AKATIO				• • • •	00.0	00.0 00.0	00.0	00.0		90	00:	0.0	. 0	LEAD A/C FUNNAY	128 SFPAKATTON	. 46		6.46		.00		00.	0.00		0.00 0.00	00.	•	0.0

A/C SEPARATIONS

128 SEPARATION VALUES IN 4 SFTS OF 52, ARPIVAL / ARRIVAL, DEPARTURE / ARRIVAL, DEPARTURE / DEPARTURE /

CLASS CL ASS THERE ARE 4 4/C CLASSES -- 3

(10110 (10210 (10210 (10410 (2011) (2021) (2011) (2 ! B CLASS THE DRUER OF SETS OF (X.Y) 15 !

~

A/C RUNAAY

(N.MILES), D/D (MINUTES) AND A/D (MINUTES) 0000 25. A/C RUNNAY (N.KILES). D/A 1,40.09 100.00 1,00.00 2.60 2.60 2.60 2.60 1.00 1.03 00.00 00.0 10,.00 2.00 c.03 9999 0.00 0.00 0.00 74ATL **.**08 32. A/A 120.00 120.00 120.00 120.00 2.60 2.60 2.60 2.60 2.60 1.00 1.00 00.0 A/C FIX 4 SETS OF 30000 3.00 00.00 0000 133.00 130.00 130.00 130.00 2.60 2.60 2.60 2.60 128 SEPARATION VALUES IN 0.00 0000 **80**• 0000 LEAD A/C RUNUAY 140.00 30.0 00.0 140.00 . 63 B-19

TRAIL A/C FIX

(FINUTES) AND AZD AKINUTES) 0/0 IN.KILES) . 0000 Ξ. 5 IN. TLESSO DIA 60.1 0.0 2.00 ŗ. 0.00 0.00 0.00 0.00 0.00 1.03 2.03 ا. د ٠, SETS OF 20020000 3.1 33: SEPARATION VALUES IN 3.03 00.0 0.00 0.00 0.00 6.00 6.00 2.63 2.63 2.63 2.63 2.63 333 .93 120

1978 IPR2, EASTERLY CONFIGURATION AIRCRAFT SEPARATIONS

VA (KIMUTES)	; ; ;													CATINITAL	•													(PINUTES)												
). D/D (*INUIES) AND 4/													TRAIL A/C FIX)	OVA CATMITEC AND ACC													TRAIL A/C FIK 3												TARIE A	
CN. KILES	3.30	60.0	=	.11	11.	17:		F 6	0 7	91.	57.	.18	# 	7 1 1 X W	50				0.00	0°0	20.0	00.00	0.0	9 7	• •	0.00	~	(N.KILES)			م م	•	•	00.0		0	0.00	0.0	37.0	
•	Go.	3.5		2.60	2.63	2.67	G	100	200		- 33	٠74	٠ ٣	53.074	7.43	5.23	4.13	600	S	000		63.0	0.00	3 i	20.0	0000	, ດ	-	7.43	5.23	* T * *	() ()	00.0	3. 3.	0 6	07.	60.0	0.00	0.0	50.5
<u> </u>	0.0	90,0	.12	•12	.12	.12	E 6	2 3	9 6	9	-1-	. 1.8	.24 TRAIL A/	CW. KTI F	09	.60	9.	0.00	0.00	0.0	0.00		0.00	000	0.00	00.0	TPAIL A	(N.KILE	!	÷ 6.9	9.4	5.00	3.33	0.0	2°0	0000	20.0	0.0	0.00	(1)
\$2. 4/4 0.30		.) () ()	2.60	2.6.3	2.63	2.63	3°.	700			. 86	~) B O	474 .68	-	•	62.4	00.0	0.00	00.0	00.00	00.00	0.00	000	•	0.00	• 0	32. A/A	7.59	5.39	600	3.0	J. u.d.	03.0	ے د د		0.00	3.03	•	0.00
SETS OF	00.0	ره. د د د د	13	.13	.13	13	e .	# a	50.	91.		. 18	.24 A/C FIX	30 2132	. 65	.65	50.	0.00	0,30	0.00	00.00	9	00.0	3	0000	00.0	;	SETS OF	.65	• 65	. 6 6 6 7	000	0.00	ر. ون و	٠ د د د د	60.0	00	00.0	02.	00.0
S 14 4	00.0	60.0 00.0	2.60	2.60	5-60	2.60	2.cp	77.	30		98.	.78	.63 LEAD	2	6.57	4.37	4.37	00.0	00.0	0.00	900	03.0	CO*0.	و ن ن	99.3	0.00	LEAD	NI S	6.57	4.37	4.37	0.00	D.03	93.0	0.00	00.0	00.0	3.03	07.7	Ĉ
ION VALUE	0.00	0 0 0 0	=	.1.	*1.	110	e 6			97.	-	.18	RUNUAY 2	ATTON VALUE	-	• 70	2.5	00.0	0.00	0.03	900	00-0	0.00	00-0	55.0	D.00	NEAY 3	-	.7	• 10	0. 5.	0.00	0.00	97.0	00.00	00.00	01.0	00-0	0.00	00.0
128 SEPARAT	0.00	9:0	2.63	2.63	2.60	2:60	1.50	1.00) · · ·	20.	•86	. 78	LEAD A/C RUI	138 CFBABAT	5.56	4 - 46	ļ	-2	F	0.03	9.0	93.0	00.0	00°0	00.0	0.00	LEAD A/C RUN	SEPARAT	5.56	90.1	94.4	00.5	00.0	03.0	00.0	90.0	00.00	00.00	6.00	00.0

•

1

.

;

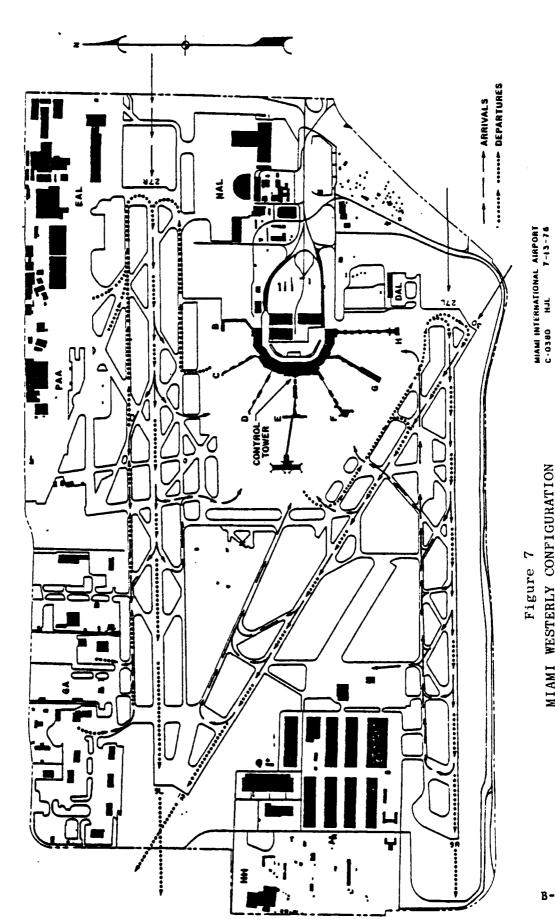
: t .

																					:					!									
	(N. MILES) DAD (MINUTES) AND AZD (MINUTES)																		AND AZD (KINUTES)																
	- E																		3																
	10 1/																		7 0																
¢	S A A																	_	S) AN																
FLX	NUTE										•							XI 3	MUTE																
3/4	Ä																	A / C	DZO (KINUTES)																
TRAIL	2/0																	TRAIL	0/0												•				
	1551	_	~	.3					_	_	-		_	•	_		_	_	(N.KILES).	_		c	_	0	~	۲.	_	_	_		_	_	_	۲.	_
-	¥. ₹	0,00	(, C, 0)	30.3	0.00	رد. د.م.		0.00	(0.0)	0.0	0000	30.3	0.00	0.00	00.0	00.0	J. O. O.	*	N. K	0,00	0.00	0.00	0.03	00.0	0.00	0.00	0.00	Co • 0	3.00	0.00	0.03	0.5	0.03	C . UR	0.0
***		2	ت	o	۽	9	٥	J	ā	د،	c	c	0	c	ç	ō	0	RU NU AY.	0/4	0	0	<u>ن</u>	ٽ	Ö	c	c	G	0	ٺ	0	c	0	0	ဂ	Þ
A/C RUNHAY	11. 074	6.63	0,43	60.0	0000	CU.0	2.00	3.0	0.00	60.00	50.00	40.00	60.09	Co • D	0.00	6.33	00.0	A/C RU		0.00	00.0	().0	00.0	Co.ú	0.00	0000	0.00	60.09	60.00	6t.00	60.00	0.00	00.0	00.0	30.0
	N.HILES)	9		0	9	3	S	00	3	9	ě	ပ္	S	00	S	č	3		(N. KILES) ,	3	ç	9	ç	၁	c	္	.30	2	25	9	8	60	င္	00.	33
TRAIL	Ē	0.00	0.03	00.0	0.00	ر. د.	0.03	00.0	3.03	0.0	00.0	30°9	0.03	00.0	0.00	0.00	0.00	TRAIL	8	6	0.00	0,00	0.30	0.00	0.03	3	0	0.00	3.33	9	0.00	00.00	9.30	0	6
_	* *	00.00	0.43	3.0	0. J.J.	00.0	00.0	00,	0,00	60.00	ن ب	3	60.00	00.0	HO.	00.0	no.	_	4 / 4	3	0.03	00	0.00	G.S	00.0	00	5.00	00	Ç,	00	00	0.00	0.00	00.0	20.
o ×	F 32.	ö	ö	Ö	ö	ċ	ö	Ö	Ö	Ç	60.U	00.09	ć,	ت	ċ	0	Ġ	×	F 32•	0	0	Ö	ö	Š	Ġ	o	ດ	9	60.09	00.09	60.30	Ö	Ö	ċ	å
/C FIX	SETS OF	0.00	00.0		00.0	0. 00	00.0	00.0	00.0	00.0	00.0	00°n	00.0	03.3	00.0	00.1	0.00	A/C FIX	SETS OF	00.0	0.00	00.0	3.00	0° 0	0.00	93.3	60.0	ر د	00.0	90.	00.0	00°3	00.0	00.0	97.
LEAD A/C	4 SE	0	2	J	G	3	ဂ	'	ð	2	()	3	0	ی	0	3	2	LEAD A	4 SE	3	9	9	a	•	0	<u>د</u> :	0	د	3	٠,	O	3	7	د	9
1	2	00.0	0.03	03:3	0.03	30.0	00.0	03:3	0.00	90.00	90.00	00-29	60.09	00.0	00.0	0.00	.00	<u>۔</u>	21	00.0	00.0	93.	00.00	07.0	00.0	03.3	3.00	00.09	63.30	00:0	63.00	0.00	0.00	93:1	00.
-	AL UES IN				Ö				1	•						l		m	AL UES		:					į						i			
Š	> NO	00-0	0.00	00-0	0.00	0.00	0.00	00.0	0.00	00	0.00	0.63	0.33	0.00	0.00	0.00	0.00	HAY	۸ 0	00.0	00.0	00.0	0.00	97.0	0.0¤	0.00	00.0	0.00	0.00	0.00	0.00	0.00	0.03	00.0	00.0
LEAP A/C RUNHAY	SEPARATION																	RUNHAY	SEPARATION							İ									
1/0	SEPA	0.00	00.0	0.00	0.00	0.00	0.00	C. CO	0.00	6C- 30	60.09	66.00	66.03	0.00	0.00	0.00	0.0	7/0	SEPA	00.0	0.00	0000	0.00	0	0.00	0-00	0.00	00.00	0.03	00.00	00-09	0· · · 0	0.00	0000	٥٠٠ ₀
LEAF	126				1		ļ				-	•	•					LEAD	128			,		-2					4		•				
!																	:											ļ				l			

The second second

Note that the arrival runway occupancy times for IFR2 conditions are set 5 seconds greater than for IFR1. The adjusted IFR2 runway clearance times and occupancy times are as follows:

Authorithorithorithold in the control of the contro	Ž	XING	INNS												
194 32 43 33 30 44 46 54 55 56 56 71 41 44 46 54 55 56 56 56 71 41 44 46 54 55 56 56 56 56 56 56 56 56 56 56 56 57 56 56 56 57 56 56 56 57 56 56 57 56 56 57 57 56 56 57 57 50	3	x into	NES MIN		3110.1	<u>-</u>	1 K.								
228 52 55 60 71 41 44 46 534 56 56 56 56 56 56 57 56 56 56 57 56 56 56 57 56 56 56 57 56 56 56 57 56 56 56 57 56 56 56 56 56 57 56 56 56 56 56 56 56 56 56 56 56 56 56		C1	841	3.5	4.5	3		0.	?	î:	£.		3.	÷	ž
259		ر-	228	22	i,	09	7	7	4	4.5		:	7	30	2,
345 68 66 71 84 54 59 65 77 50 50 505 505 505 505 505 505 505 5		۲,	259	36	J.	.,0	7.8	44	E¢.	27	::\ 23			,	
305 38 41 47 49 30 32 33 3700 530 38 41 47 49 30 32 33 3700 527 60 64 70 78 48 52 56 55 300 526 60 64 70 78 48 52 56 65 300 526 65 34 30 30 526 65 74 76 78 48 52 56 65 30 30 5280 65 74 76 78 52 57 62 73 30 30 5280 65 74 76 78 52 57 62 73 30 30 5280 65 74 76 78 52 57 62 73 30 30 520 5310 59.0 .5992 56.0 6140 57.0 6649 520 5310 59.0 .5992 56.0 6140 57.0 6649 5210 622 52.0 4400 60.0 4799 40.0 4872 5210 6250 54.0 6702 54.0 6980 65.0 7589 5210 6250 54.0 6702 54.0 6980 65.0 7589 5210 6400 60.0 4772 54.0 5980 65.0 7589 5210 6440 65.0 6702 69.0 5110 58.0 5752 5210 6440 65.0 6702 69.0 5110 58.0 5752 5210 6440 65.0 6702 69.0 5110 58.0 5752 5210 6440 65.0 6702 69.0 6980 65.0 7550 5210 6440 65.0 6702 69.0 6980 65.0 7550 5210 6440 65.0 6702 69.0 6980 65.0 7550 5210 6440 65.0 6702 69.0 5110 58.0 7550 5210 6440 65.0 6702 69.0 6980 65.0 7550		C1	345	R 9	99	71	#3	7.J	90	i;	?.	36	36	27	3
530 38 41 47 49 30 32 35 37 30 30 277 60 64 70 78 48 52 56 65 30 30 266 60 64 70 78 48 52 56 65 30 30 120 65 74 76 78 52 57 62 73 30 30 280 65 74 76 78 52 57 62 73 30 30 280 65 74 76 78 52 57 62 73 30 30 280 65 74 76 78 52 57 62 73 30 30 200 6702 6980 69.0 69.0 69.0 69.0 69.0 69.0 69.0 69.0 69.0 69.0 69.0 69.0 69.0		~	305	38	1 1	47	4	30	3	33	, ();	7	3	3	3
277 60 64 70 78 48 52 56 65 30 30 20 276 60 64 70 78 48 52 56 65 30 30 30 276 60 64 70 78 48 52 56 65 30 30 30 280 65 74 76 78 52 57 62 73 30 30 30 00000000000000000000000000		m	530	85	7	4	÷	3	ं	33	٠,٠	š	Š	2	3
266 60 64 70 78 48 52 56 65 30 30 276 60 64 70 78 48 52 55 56 30 30 120 65 74 76 78 48 52 55 52 73 30 30 120 65 74 76 78 52 57 62 73 30 30 121 54 78 52 57 62 73 30 30 121 54 78 52 57 62 73 30 30 121 570 6980 69.0 69.0 69.0 60.0 69.0 60.0 <td></td> <td>-2</td> <td>277</td> <td>09</td> <td>70</td> <td>20</td> <td>82</td> <td>48</td> <td>5. C1</td> <td>56</td> <td>55</td> <td>3</td> <td>9</td> <td>3</td> <td>3</td>		- 2	277	09	70	20	82	48	5. C1	56	55	3	9	3	3
276 60 64 70 78 48 52 55 62 73 30 30 280 65 74 76 78 52 57 62 73 30 30 280 65 74 76 78 52 57 62 73 30 30 280 65 78 52 57 62 73 30 30 12 12 76 78 52 57 52 57 50 30 30 12 12 76 6980 69.0 69.0 60.0		m	266	9	64	2	78	48	ເນ ເນ	36	90	30	9.0	3,	3
120		~7	276	9	49	2	78	48	52	35	90	30	30	30	3.
280 65 74 76 78 52 57 52 73 30 30 OCCUPANCY IIMES IFR2 12 75 67 <td></td> <td>m</td> <td>120</td> <td>92</td> <td>74</td> <td>76</td> <td>78</td> <td>52</td> <td>23</td> <td>62</td> <td>73</td> <td>30</td> <td>90</td> <td>30</td> <td>30</td>		m	120	92	74	76	78	52	23	62	73	30	90	30	30
0CCUPANCY TIMES IFR2 12 13 45.0 5110 59.0 5992 56.0 6140 57.0 6349 72.0 6702 53.0 6980 69.0 7590 60.0 8052 81.0 7592 70.0 7590		£5.	280	65	74	76	28	52	57	25	73	35	3	0.5	30
4972 45.0 5110 59.0 5992 56.0 6140 57.0 6650 72.0 6702 53.0 6980 69.0 7590 60.0 9200 81.0 9292 70.0 6980 69.0 7590 60.0 34.0 48.0 4222 52.0 4400 60.0 4799 40.0 5110 54.0 5732 52.0 5769 49.0 5992 53.0 6449 59.0 6650 56.0 6702 54.0 5992 53.0 7590 69.0 8052 64.0 9200 82.0 65.0 7590 69.0 1232 35.0 2470 35.0 2682 40.0 4222 51.0 4400 60.0 4972 54.0 58.0 58.0 5992 58.0 6649 65.0 2470 269.0 6980 65.0 -4 10 5769 73.0 5992	ξ	AKRIVAL		ICY TIMES	IFR2										
6450 72.0 6702 53.0 6980 69.0 7590 60.0 9200 81.0 9292 70.0 6980 69.0 7590 60.0 3430 48.0 4222 52.0 4400 60.0 4799 40.0 5110 54.0 5732 52.0 5749 40.0 5992 53.0 6449 59.0 6450 56.0 570 590 690 65.0 7590 69.0 8052 64.0 9200 82.0 65.0 7590 69.0 1232 35.0 2470 35.0 2682 40.0 7590 69.0 490 55.0 570 59.0 6980 65.0 7592 58.0 66.0 4972 54.0 5110 58.0 8992 58.0 66.0 4972 59.0 6980 65.0 9200 84.0 5769 73.0 5992 75.0		4972	45.0	5110	59.0	•	5992	56.	0	6140	5	0.	6549		53.0
9200 81.0 9292 70.0 2 18 48.0 4222 52.0 4400 60.0 4799 40.0 5110 54.0 5732 52.0 5749 49.0 5992 53.0 6449 59.0 6450 56.0 6702 54.0 6980 65.0 7590 89.0 8052 64.0 9200 82.0 6980 65.0 4222 51.0 4400 60.0 4972 54.0 5110 58.0 5592 58.0 6449 65.0 6702 69.0 6980 65.0 9200 84.0 1120 29.0 1232 27.0 2470 42.0 2682 46.0 1120 29.0 5732 77.0 5769 73.0 5992 75.0		6650	72.0	6702	53.0		9869	.69	0	7590	99	ن.	8052		63.0
2 18 3430 48.0 4222 52.0 4400 60.0 4799 40.0 5110 54.0 5732 52.0 4400 60.0 4799 40.0 5110 54.0 5732 52.0 5769 49.0 5992 53.0 5649 59.0 8650 54.0 5702 54.0 6980 65.0 7590 80.0 1232 35.0 2470 35.0 2682 40.0 4222 51.0 4400 60.0 4972 54.0 5110 58.0 5992 58.0 649 65.0 4972 54.0 5110 58.0 5992 84.0 1232 27.0 2470 42.0 2682 46.0 4799 64.0 5732 27.0 2470 42.0 2582 46.0 4799 64.0 5732 27.0 5769 73.0 5992 75.0		9200	81.0	9292	70.0										!
3430 48.0 4222 52.0 4400 60.0 4799 40.0 5110 54.0 5732 52.0 5769 49.0 5992 53.0 6449 59.0 6450 56.0 6702 54.0 5992 53.0 7590 6450 8052 64.0 9200 82.0 82.0 82.0 82.0 82.0 82.0 82.0 8		6	18												
5110 54.0 5732 52.0 5769 49.0 5992 53.0 6649 59.0 6450 54.0 6702 54.0 6980 65.0 7590 69.0 8052 64.0 9200 82.0 30.0 1232 35.0 2470 35.0 2682 40.0 4222 51.0 4400 60.0 4972 54.0 5110 58.0 5992 58.0 6649 65.0 6702 69.0 6980 65.0 9200 84.0 1232 27.0 2470 42.0 2682 46.0 4709 64.0 5732 27.0 2470 42.0 2682 46.0 4709 64.0 5732 27.0 5759 73.0 5992 75.0		3630	48.0	4222	52.0		4400	60.	0	4799	7	3.	4972		49.0
6449 59.0 6450 56.0 6702 54.0 6980 65.0 7590 69.0 8052 64.0 9200 82.0 65.0 3 16 8052 64.0 920 82.0 65.0 422 51.0 4400 60.0 4972 54.0 5110 58.0 5992 58.0 6649 65.0 6702 69.0 6980 65.0 9200 84.0 1232 27.0 2470 42.0 2682 48.0 1120 29.0 1232 27.0 2470 42.0 2682 48.0 4799 64.0 5732 71.0 5769 73.0 5992 75.0		5110	54.0	5732	52.0		2769	46	0	5992	S	٠. د د د	6140		0.73
7590 69.0 8052 64.0 9200 82.0 3 16 1120 30.0 1232 35.0 2470 35.0 2682 40.0 4222 51.0 4400 60.0 4972 54.0 5110 58.0 5992, 58.0 6649 65.0 6702 69.0 6980 65.0 9200 84.0 -4 10 1120 29.0 1232 27.0 2470 42.0 2682 48.0 4799 64.0 5732 71.0 5769 73.0 5992 75.0		6649	59.0	9920	56.0		6702	54.	0	9869	.0	0:	7589		0.60
1120 30.0 1232 35.0 2470 35.0 2682 40.0 4222 51.0 4400 60.0 4972 54.0 5110 58.0 5992, 58.0 6649 65.0 6702 69.0 6980 65.0 9200 84.0 1120 29.0 1232 27.0 2470 42.0 2682 48.0 4799 64.0 5732 71.0 5769 73.0 5992 75.0	ъ	7590	0.69	8052	64.0		9200	82.	0						
1120 30.0 1232 35.0 2470 35.0 2682 40.0 4222 51.0 4400 60.0 4972 54.0 5110 58.0 5992, 58.0 649 65.0 6702 69.0 6980 65.0 9200 84.0 1232 27.0 2470 42.0 2682 48.0 4799 64.0 5732 71.0 5769 73.0 5992 75.0	_,	7)	91	1											
4222 51.0 4400 60.0 4972 54.0 5110 58.0 5992 58.0 6649 65.0 6702 69.0 6980 65.0 9200 84.0 120 29.0 1232 27.0 2470 42.0 2682 48.0 4799 64.0 5732 71.0 5769 73.0 5992 75.0	2	1120	30.0	1232	33.0		2470	i M	0	2682	4	0:	3630		45.0
58.0 6649 65.0 6702 69.0 6980 65.0 84.0 10 29.0 1232 27.0 2470 42.0 2682 48.0 64.0 5732 71.0 5769 73.0 5992 75.0		4222	51.0	4400	0.09		4972	54.	0	5110	r.		5732		51.0
84.0 10 10 29.0 1232 27.0 2470 42.0 2682 48.0 64.0 5732 71.0 5769 73.0 5992 75.0		5992	58.0	6649	65.0		6702	69	0	9869	3,0	0:	7590		71.0
29.0 1232 27.0 2470 42.0 2682 48.0 64.0 5732 71.0 5769 73.0 5992 75.0		9200	84.0												
64.0 5732 71.0 5769 73.0 5992 75.0	•	1120	29.0	1232	27.0		2470	42.	0	2682	46	9.	4222		0.63
		4299	64.0	5732	71.0		5769	7.3	0	5992	7.5	0	6702		80.0



MIAMI WESTERLY CONFIGURATION

CONFIGURATION B MODEL INPUT DATA

MIAPI INIL". ALMPHAT EXPLA 2 ROUTES-1976 CONFIG-N SEPAR-78VFRI DEMANU-78	
PANCON NUME	
RANDIM NUMBER SLF DS 02051 91921 69011 92157 14577 10493 27011 40961 15011 63661	
START TINE AND FINISH TIME	
PRINT CPTIONS F F F F F F F F F F F F F F F F F F F	
NUMAED OF ATRLINES	
AIRLINE CODIS 1A LA 90 FF GG HH CI C2 F1 F2 F3 F4 11 JF PT GA	
RUNHAYS	
KUNHAN NAMES 27R L7L 3G	
KUNNAY IND LINK NUATERS .	
ANCE TIMES FOR A/C CROSSING A/Y DEPARTURE ON R/W ARKIVA	,
40. 28. 30. 31. 35. 30. 30. 30. X/H"DEPARTURE ON R/W" ARRIVA	
XNG LIKK FUNALY ARALVAL ON RATURE ON RAKIVAL ON FINAL	
KUNHAY AKRIYAL AN K/W GEPAKTUKE ON R/W AKRIYA 1 400 510 570 710 430 470 490 590 300 300	
RUNWAY ZHRIVAL ON F/W DEPARTURE ON R/A A6. 62. 64. 78. 52. 58. 63. 75. 30	
PENMAY ANKIVAL ON K/W DEPAKTUKE ON R/W AKKIVAL ON FI	
AKKINAL NY KIN UEPAKIUKE UN KIN AKKINAL UN F 71. 62. 64. 18. 59. 65. 82. 65. 30. 30. 30. 30.	1
AND LITTLY PUNCTAL ARELIAL UNIVERSITY OF TABLE ARELIACH UN FINAL A	
3 22. 39. 34. 37. 26. 28. 28. 32. 30. 30. 30. 30. 40. 40. 40. 40. 40. 40. 40. 40. 40. 4	:
3 36. 44. 44. 46. 31. 34. 34. 39. 30. 30. 30. (A Purzay : ACKEVAL ON K/W DEPARTURE ON R/W AKKEVA	
S 30. 44. 44. 44. 34. 34. 34. 34. 39. 30. 30. 30. X RUNEAY 14. IVAL ON A/W UEPAKTURE ON R/W AKKIVA	
3 30. 44. 44. 46. 31. 34. 34. 39. 30. 30. 30. 31. 41. 90. 44 £4. 1V.L. 0N R/W DEPARTURE ON R/W ARRIVA	
53 5 50 64 63 74 64 65 54 68 50 30 30 30 30 50 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	!

JNHA LASS				B-25		:	

A CHNOY	Y CAUSSING TIME	G TIME	AHO	INTE KAKK I VAL	CAP				
X I	DLLAY	HE A.4	STO	0.4	:	,	,	-	
345	1.50	1.03	•	50			:		
₽\$~	1.50	1.00	•	. 50			:		
5 2 9	1.50	00.1	•	.50					
127	1.50	1.00	•	.50					
331	1.50	1.00	•	.50		1	1		
9 7	1.50	3.5	•	• 50	•	,			
255	1.50	03.	•	.50					
	05.1	000	•	96.					
120	20.	9	1	02.			:	ere andere produce a de la company de la com	****
977	200	300	•	.,0					
177	200.1	2	•	.20			i :	A designation of the second se	
197	06.1	00.1	•	05.					
500	1.50	200		200		*** ** = ***** · **** ***** ******			
	2	•	•	2					
NUME: R	P. CF. EXITS		:				:	a complete the second comp	
	7.					;		•	
				;					
ULSTANCE	- !	ET FRG	E	او	-	CEXIL CINK NO.	VE R 503	DISTANCE	
		.		27,50.0	0.0056	323 3810.0	2.50	0.5024	
:	207 5440-0	. ·		6230.0	0.0044 505	321 4801.0	107	0.004.7	
		0	255	9220.0		•	;		
. 1		071							
	1	2	-				i !	THE PROPERTY OF THE PROPERTY O	
MOLD 1	HOLDING AREA NUMPERS 99	UMPERS							
	!	1	:				1	to the second of	:
NUMBER	UF G/A	BASING AREAS	AREA	S	•				
:	۲	•					<u>i</u>		
:			1				•		1
• •	ASING ARE	5 5 5 5 T	17	20	19	•		•	•
i	!	1					:	the same of the sa	
					***************************************	***************************************			
1		i i !					i :		:
!		:					1		
								-	•
		 	! !				!		
				,		:			
							•		
					4	:			

.

•					17	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	23		,			
į												
- 1	~											
i	01					;						
1	11										.	
	11											
	20					!						
	18				.							
	9	17	77	3					ļ			
				i !	: !	!		!		•		
						!					1	
		; ; ;			!	:	i		- ; ;			
, 1						1		•				
ZW	INTERARRIVAL DEV = 0.60	VAL GAP		!	į		1		1 4 			
~	THS FRO	APPODACH PATHS FROM OUTER HARKER		TO THRES	HOLD IN	VALT ICAL	THRESHOLD IN MACTICAL HILES (RONWAY'NO.	WAY" NO.	A/C CL'AS	A/C CLASS, LENGTH	£	· !
- 1						· ·						
•	-				-				1			
	,		}	i		!			!			
											!	!
						! !						-
	•		:	1		:		:				***
	;			•	.	i			:			

And the second s

				!								!	:				:			t	1	:	:	:		!		:	•	1	
													:	*					•		!	:								!	
:		-	-				-			•						•	!				t .	:				• !	•	!			
						•								i i											:					-	:
	:		-			-	: ! !			!	:			:				!				•	i .					!		[•
	:										•	· .	:	· · · · · · · · · · · · · · · · · · ·	-	;			!				1			:					:
! !	*									•												!							9		
. 1				-						:	i i 					:						; ;	1				901	382	149 51	11 - 6	. E
:	1		!	-										1				-		1						526	107 10	36 36	7 85	144 11	186 . 51
:										•		 				:	1 2	389	376	358	380	149	379	205	374	385 !	108	161_	147	145	177
	!					,									3.60	355	TeE.	322	713	111_	205	002	210	315	022_	513	350	261	146		921
; ! ;														3.80	204	116	1.86	223	212	172	203	102	211	105	122	386	109	193	373	146	175
	;							160	358	376	379	901	366	504	503	1115		222	37.7	956	792	207	377	349	727	111	011	194	-145	147	154
Ins	:						362	365	171		210	107	159	503	202	114	189	122		_113_	102	203	717	348	. 223	176	111	195	144	140	174
THU-HAY PATHS	169	311	370	562	797	:	197	159	115	212	117	108	365	707	103	611	185	922	210	174	200	*07 _	213	347	577	\$21	111	196	143	16.5	173
TAXIMEY	200 200 11865 2	\$62	્ર≘.	L INKS 2	LINKS 2	LINKS 3	363 LINKS 4	365 LINKS 4	35	377	377 LINKS 4	35.0		201	~	28	E.	\simeq	170 / 170 /	354	- 661	=	376		S	3 CM17	~	_	241	915	LINKS III

the second secon

					•							-		•		•						
171		911	197	00.1		222					173				Parament	601		£0.			•	
3 356 172	. !	3114115	5 196 363		7.1	220 221			166 211 1		5 354 174			9/1 5/1		011 111 2		187	:			
174 173		11 136	194 195	70		347 374		ļ	110 110		176 175			174 354		351 112			362			
76 175 354		ZIIIU	192 193		94.7	348			350 109		386 177	358			976	114 113			363 197		And the same of th	
171 176	:	011 601	161 061			37.5	224 389		107 109 115 116		·	172 171			585	116 115	108 107	484	981 981			
526 LINKS 11 346	155 TENKS 11	352	LINKS 11.	362 LINKS 11	302	LINKS 13	223	LINK'S 14	106	LINKS 14	956	95.	LINKS 14	350	JAC JANE I	352	353	LINK'S 16		-2	9	

1

!

!

İ

VECTUPING DELAY INPUTS FIX DELAY EVALUATION LEVEL HOLDING PCT. MAXIMUM VECTORING DELAY MINIMUM HOLDING DELAY	:
7	!
TAKE-OFF GIEUE SHITCH FOR RUNNAY 2 = 99 ALTERNATE RUNNAYS AKE 0 0 0 0 0 0	;
TAKE-OFF OUEUE SHITCH FURNAY 3 - 99 ALTERNATE RUNMAYS ARE 0 0 0 0 0	1
CATE HOLD LIMIT - 8 HOLD TIME50	1
BATE HOLD LIMIT - 6 HULD TIME50	
6.47 E HOLU LIMIT - 8 HULO TIME50	
ADRSPACE DELAYS FIX OCCURENCE PERCENTAGE HOLD MEAN HOLD SIGMA	
	. !
	-
\$ 34.00 4 34.00 4.00	
TOUCH-AND-GO RUNYAF OCCUPANCY TIME IN SECONDS TAZC CLASS, MEAN, AND STD. DEV.)	:
2 0.00 0.00	
- •	
	i

MUNMAY LAIT SELECTION——USAGE PERCENTAGE BY EACH A/C CLASS AND BY EACH RUNWAY (EXIT LINK NO. VERSUS PROBABILITY)
TLASS 1 RWY 1 29. 31. 21. 21. 1.00 1.00 .95 09.1 .31 31 259. 287. __ 00.1.__ 46. 20. 1.00 .85 20.5 16. 20. 24. • 96 1.00 35. 25. 38 .55 .98 .55 .98 302. 259. 323. 323 290 AJC APPRUACH SPEEU IN KNUTS (A/C CLASS, MEAN, STD. DEV.) . 06 .92 • 92 20 00.1 1.00 17. 20. 23. 23. 1.00 1.00 .92 26. 30. .03 .93 50.00 50. 50. 287. 329. 302. × 304. .70 ... 284. 316. 316. 284. 316. 284 84. 00.1 16. 20. 22. .82 .83 200 • 83 .83 39.5 20. • 70 1.00 266. 8 45 .02 .45 .84 5.00 45 5.00 290 305. 329. 116. 287. 302. 105. 270. 270. 270. 266. 100.00 4 RHY 255. - 50 ELASS 2 FW T . 40 33. 25. 25. 20. * 2 2 2 140.00 . 55 1.00 290. .50 CLA95 I RHY 2 CLASS 1 18HY 1 3 .68 CLASS 2 RW . 3 CLASS 2 PHY CLASS 3-RRY CLASS 3 PHY CLASS 3 RHY 298. TEASS " 4"RBY CLASS 2 321. TLASS 4 004 ECASS 3 70. 69. 3. 107. TLASS 4 .00 307. 0 321. 321.

												•
00.00	43.00 50.00	46.00 54.00	29.00			•						
0.0494	4720.0 6230.0	4250.0 5480.0	4780.0				•	i. 				!
74.00	42.00 53.00	51.00	56.00	!	ERSUS TIMED				•			. :
6230.0 9220.0	4460.0 5840.0	3810.0	4460.0	9.00	>	•						. :
71.00	46.00	40.00 51.00 63.00	54.00	30.00	DH NUMBE							
8270.0	4250.0 5480.0 7770.0	3390.0 4740.0 6891.0	4250.0	25.00	FS (RAND							!
61.00	44.00	37.00 44.00 59.00	50.00	20.00 25.00	IN MINOT							
7770.0	1410.0 4960.0 6691.0	2930.0 4720.0 6230.0	38 10.0	15.00	NOTTORI							!
63.00	39.00 46.00 59.00	34.00 47.00 58.00 6	41.00 60.00	SPEEDS IN MPH 10.00 15	LATENESS DISTRIBUTION IN MINUTES (KANDON NUMBED).00			•			:	• :
000	2410.0 4790.0 68.10.0	2400.0 4450.0 5840.0	66	FAXIENC SP	LATENE 3. CO							i :

	The same and described the same of the sam		المتعاقب المتعاقب المتعاقب والمتعاقب	• .		•								•							
	AND THE RESIDENCE AND AND ADDRESS OF THE RESIDENCE AND ADDRESS OF THE PARTY OF THE										A THE RESIDENCE AND ADDRESS OF THE PARTY OF	•					de de la company de la company de la company de la company de la company de la company de la company de la comp				
- .	AVERAGE SPEED	180.00	180.00	180.00	180.00	160,00	140.00	180.00	202.50/	202.50	180.00	180.00	180.00	198.90	1.80.00	160.00	180.00	160.00	180.00	180.00	
-	CLASS FIX TO K/W DIST.	1 . 28.50	28.50	3 28.50	28.50	55.50	1 28.50	., 58*20 , 7	27,00	27.00	3 7.00	1 28,50	42.00	1 31.50	31.50	30.00	, 00.06	. 31.50	28.50	2	
IN TEALL TIMES			1	-			2	~ ~		۲.	7	,	3					~ ~		~	

THE REPORT OF THE PROPERTY AND ASSESSMENT OF THE PARTY OF

A JULY SELS UP (X.Y.) 15 J CLASS A UP SELS UP (X.Y.) 15 J CLA	SE15 UF (1:31); (1:31); (1:31); (1:31);	-		CAS A PER LOW	L' BY A/C	DEVIATION	DETAKLUKE / DETAKLUKE	
10. 17.2. 11.31. 11.31. 11.31. 12.31. 12.41. 14.41.	11.2), (1.3), (1.2), (1.3), (1.2), (1.3), (1.2), (1.3), (1.2), (1.3),	2 E	برجو جوزجي		-			
1.21), (1,31), (1,4), (1,4), (1,2), (1,3), (1,4) 2.29	13.2); (3;3); RUMMAY 0	(x,r) 15 1	(2,2),	2,31, (2	(4:			
FEO. ACC SUMMAY OF LEGIN AND TRAIL A	FAD A/C RUNHAY O	(3,4), (4,	(4.2)	4,31, (4				
1.75		40 A/C	32, A/A	TRAIL A	P CNMA	TRAIL	AND	
1.55 70 110 15 15 15 110 110 111 110 111 1	22 70	٠٠٠	3.94	09	• : •	. 50	e de la companya	Andrews of the state of the sta
1.74 .11 1.11 1.15 1.15 1.15 1.15 1.15 1.15	22 - 52	9.		04.				
1.72	, 11. 11.	•	1.69	-12	1.40	11.		
1150 .03 2.00 .08 2.00 .08 2.00 .08 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	2 - 2		1:47	27.	1.22	.11		
\$\begin{array}{cccccccccccccccccccccccccccccccccccc	#0°	0.0	2.00	90.	2.00	90.		• • •
2.0.0 C.0.0 0.00 0.00 0.00 0.00 0.00 0.0	90.		5.8	88	.58	#0.		:
FID ALC RUNNAN I LEAD ALC FIX 0 1741 KAC RUNNAN 3 TRAIL ALC FIX 0 0.00 0.00 0.00 0.00 0.00 0.00 0.00	.00 0.00	0.0	0.00		9.00	90.0	•	•
FAD A/C RUMMAY 1 LEAD A/C FIX 0 THAIL A/C KUMMAY 3 TRAIL A/C FIX 0 0 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00	0.0	00.00	: • •	00.0	0.00		
FAD A/C RUNNAY I LEAD A/F FIX O TRAIL K/C RUNNAY 3 TAAIL A/C FIX O TAO O TO O TO O TO O TO O TO O TO O	0.00 0.00	0.0 00.	00.0	•	00.0	00.0		
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	FAD A/C RUNHAY 1	LEAD A/C	1X 0 X	KA7L	KUNH D.A	TRAIL	O A ONA	
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00	0.00	00.0	000	•			
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	00.0	00	3	C.	00.00	00.00	e i productivo de la compania del compania del compania de la compania del la compania de la compania de la compania de la compania de la compania de la compania de la compania de la compania del la compania de la compania del la compan	•
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00		<u>ت</u> د	• •	00.0	00.0		
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	00.0	.00 .00	33		00.0	00.0		
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.03	000	0		00.0	0.00		
.04 1.00 .06 .63 .08 .83 .06 .06 .03 .06 .03 .06 .03 .06 .03 .06 .05 .06 .06 .06 .06 .06 .06 .06 .06 .06 .06	90.0 #0.	000	> ~		7.00	90.0		
00	, do	75		90.	. 83	90.		
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		• •		800	. 50	90.		
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	02.0	000	7		00.0	00.0		
TABLE SARCRAFT SEPAR	00.0	.00		• •	00.0			
TABLE 5	00.0 03.	0.0	~	•	00.0	00.0		
TABLE 5					•			1
TABLE 5			!	:				
AIRCRAPT SEPAR				i !				
						RAPT SEPAF		

	0.00 0.00	200 000 000 000 000 000 000 000 000 000	0.00 0.00 0.00 0.00 2.00 0.00 0.00 2.00 0.00 0.00 0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	75 .08 .58 .08 .58 .08 .58 .08 .58 .08 .58 .08 .58 .08 .58 .08 .58 .08 .58 .08 .58 .08 .58 .08 .58 .08 .58 .08 .58 .08 .58 .08 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50	4 SETS UP 52: A/A INSTILESS; U/A INSTILESS; U/S CANA INSTILESS; U/S CANA UNITERSS; U/S CA
--	--	---	--	---------------------------------------	--	--	--

DEPARTURE \ APRIVAL ANO DEPARTURE A/C FIX 0
(MINUTEST AND A/D (MINUTES) (MINUTES) 32. A/A (N.HILES), D/A (N.HILES), D/O (HINUTES) AND A/O 1978 IFR1, WESTERLY CONFIGURATION DE PAR TUPE AIRCRAFT SEPARATIONS AKAIVAL, LEAD A/C RUNARY O LEAD A/C FIX O TRAIL A/C RUNHAY O TRAIL 128 SEPARATION VALUES IN 4 SETS OF 32, A/A (N.MILES), D/A (N.MILES), D/D UF 32, ARRIVAL / ARKIVAL, DEPARTUPE / PAIKS UF MEAN AND STANDARD DEVIATION A/C CLASS Y FOLLOWED RY A/C CLASS Y 200 11 11 10 80 0.00 00000 0000 .. 08 0.00 0000 90. • 08 .08 90. .08 THE DROCK OF SETS OF (X,Y) IS 1 TIATO (1.27, 1(.3), 11.45, (2.1), (2.2), (2.3), (2.4) (3.1), (3.2), (3.3), (3.4), (4.1), (4.2), (4.3), (4.4) 221.12 90 0000 0.00 5.39 7.59 4.24 0000 0.00 2.00 0.00 00000 1.00 0.00 1 16 FAIRS 1 C CLASS
1 C CLASS
1 C CLASS
1 A CLASS LEAD A/C FIX 0 Ä 06 • 65 90. 4 SETS 0 00000 • 65 80. 0.00 000 0.00 00.0 . 08 .08 0000 90 5.00 128 SEPREATION VALUES IN A SETS EACH SLT OF 32 IS CUMPUSED UP THE "16" SETS AND POSSIBLE WAYS THERE AND 4 A/C CLASSES -- I 2.60 2.50 1.00 1.00 0.00 0.00 0.00 00.00 00.00 00.00 00.00 00.00 00.00 00.00 00.00 00.00 4.37 2.40 128 SEPARATION VALUES IN 4.37 700 .03 0000 0.00 . 0.A TAUNKAY A/C SFPAKATIONS 4.40 22.50 22.50 23.50 0.00 0:00 LEAD A/C B-36

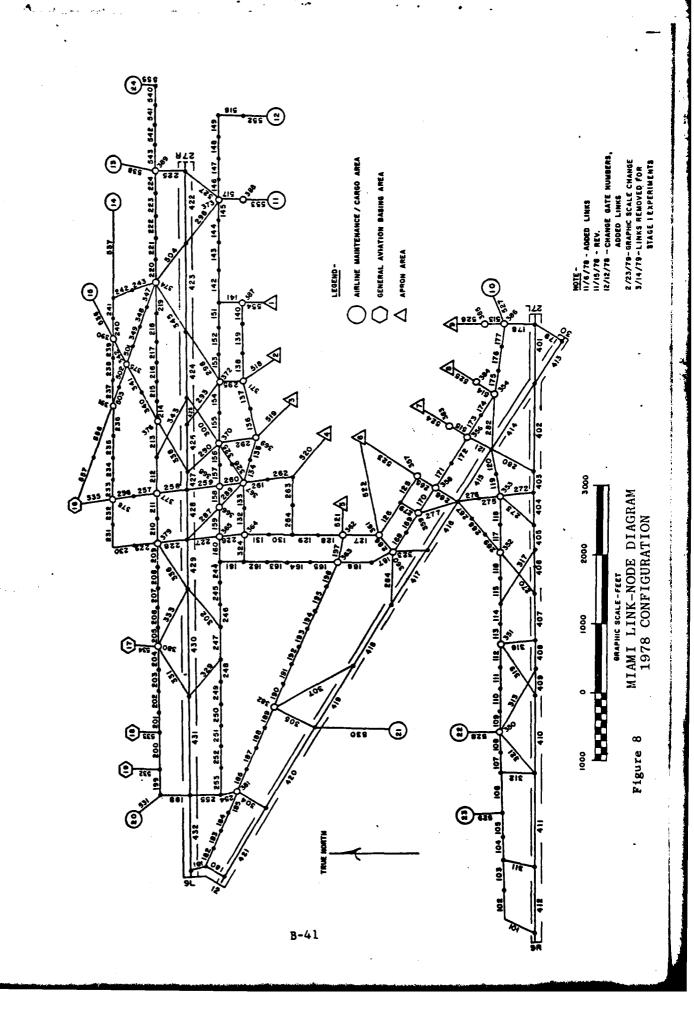
																a contain an				A CONTRACTOR OF THE PROPERTY O										The state of the s							
			Commence and the commence of t	A A A A A A A A A A A A A A A A A A A							TRAIL A/C FIX 0					A THE PROPERTY OF THE PROPERTY			AND THE PROPERTY OF THE PROPER					-0/0 (HINUTES) AND A7D (MINUTES)			Principles of the second of th										TABLE 6
00.00	00.0	00.0	0.00	00.0		90.	0.08		00.0	•	3 N.MILES)	. 50	5.0	0.00	11.	111	.11	90°0°	80.	90.	1.	.18		Y 2 TK	• 50		. 50	.11	11.	•111	90.	3 3	.06	.16	71.		
000	0000	00.00	0000	000	2.00	00.1	00.1	00	00.0	00.0	/C RUNNA S) . D/A	7.43	2.63	4.13	1.20	1.20	1.20	66 33	.33		.26	97.		SI, DIA	4.	5.23	4.13	1.20	1.20	1.20	99•	 	.33	.31	82.		
0.00		00.0	•	•	. 0	0	- c	. 0	00.0	0	TRAIL	990	0 4	•	21.	-	_	0. 0.	0	-		118		TRAIL A	٠,	င ၖ	- 09			~	0 (5.5	. 09	91.	7	- 52.	
00.0	• •	•		•		•		•			0 2	7.59	٠,٠	. ~	2	. ~	~	33	6	~ ~	~ ~	2 .	•	0 32,	•	5.39	•	• .		•	996	33.	.33	.31	.26	92	
00.0				• :		80.	80		00.0		SETS OF	99	0 4	•	•13		-	900	80.	ج ≎		91.		SETS OF	9	65 65	÷.			-	• :	0.0	C	-	~ -	- 54	
0.00	00.0	00.0	00.0	000	2.00	00.1	00-1	0.0	00.0	00.0	LEAD	15.0	15.4	4:37	1.20	1.20	1.20	33.	.33		. 28	.26		~	•	4.37	•	• .	1.20	•	990	?:	.33	.31	. 53°	92.	
0.00		00.0		- 1		80.	8 6	•	0.00		IUNNAY 2 .	2			41.			, , ,		90.	• i •		• :	UNWAY 3	•	??	. 02	*	, , ,	• 14	0	\$ 80 \$ 0	.04	•1°	7 -		!
				ļ						0.00	C RUI	1	ļ					0 m					1 6	2 Z					. 02	:			!			İ	

And the second s

/ BEPARTURE AND ARRIVAL / DEPARTURE 1.4 (H.H.LES); O/A IN-MILES); AliO A/O (HINUTES); AliO A/O (HINUTE (MINUTES! A/D 12.1 SEPACRICA VALUES IN 4 SETS OF ACKIVAL / APRICAL, DEPARTUPE / APRIVAL, DEPARTUPE / APRIVAL, DEPARTUPE / APRICAL, DEPARTUPE / APRICAL, DEPARTUPE / APRICAL, SET IN APRICAL DEPARTUPE / APRICAL SET IN APRICAL DEPARTUPE / APRICAL SET IN APRICAL SET IN A CLASS A FOLLOWED BY AZC CLASS Y INC. APRICAL SET IN A CLASS A FOLLOWED BY AZC CLASS Y INAIL ATC PUNTAY O TRAIL ATC FIX O INVITES), DIA IN-HILES), DID (HINUTES) AND STAGGERED PARALLEL APPROACHES, 1978 IFRI, TWO MILE IN-TRAIL TKAIL A/C FIX WESTERLY CONFIGURATION AIRCRAFT SEPARATIONS TABLE 7 50 0.00 19000 A/C PUNHAY 00.00 00.00 THAIL 80 5.39 5.39 4.29 00.00 0.00 09.7 2.00 1.00 1.00 0.00 CLASS F CLASS 1 A CLASS 11 3/ V VE 11 LEAD A/C FIX 4 SETS UF S. PAS ATTOR VALUE 5 IN 4 SLIS UP 0.00 00.00 00.0 00.00 00.0 • 0 B .08 0.00 S 11.11 124 SEABATION VALUES IN 32. 30.00 -855 00.00 eg. .0 .0. S. II. . aus FINTAY LE 59 - 476 - KUNDAY 4.4. 4.6 7.53 24.7 10.00 30.5 1.69 00.0 1.50 1.00 33.5 . 2.65 3.1 1.10 1000 0.00 LEAD ATC 0.0 0.63 B-38

COLUMN AND AND AND AND AND AND AND AND AND AN			-								0 0	EST AND A/D (MINUTEST						*		•		X U AND AZD (MINUTES)								
00 0 00					20.0	i		١	00.0		1 3	· N.				.11	0 .11	900		1 10		RUNNAY 2 TRAIL A/C FIX	94.	3.00		0 .11		20 0 ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °	.14	
00.0					00.00 00.00	30°2					1	IN.MILESTS	.60 7.43			.12	07.1 21.	.08		.16 .31	.18 .26	TRATE AVE	. 60	.60 4.13		12 1.20		.03	.14 .28	
0.00	, ,		0.00 00.0		00.0				00.00		ž	75 10		62.4	6.2.4	1.20	02*1 61:	.03	-	.16 .31	.18	SETS OF 32. A/A	7.59	62.4 69.		13 1.20		50.		1 X
06.0	00.0	0.00	0.0 0	00.0	00	2.30		1.00	0.00	0.00	2 LEAD	41.01.5 TH 4		r '. r	1		~ ~			16.		ALUES IN 4	15.0	70.7		02-1 5			.14 .24	
0.50				1	00.0				00.0 0.0 0.0		3	KATTA	0/ ، ۵۴۰٬				61. 02.1	80° cs.		.1.		LEAD FIC COMMEN-	5.56	0/- 04-4		51. 02.1		30.	0,1	

1.								•				-																				-	
		υ¢•	0°.	•00	• 00	00.0	0.00	0.00	0.00) (() () () () () () () () ()		00.4	1 TRAIL A/C FIX 0	HILESS, D/D (HINUTES) AND A/D (HINUTES)		0	.59	2 • UV	000	0.00	00.00	. 00*0	5. 00	1.0 N.C.	0.50	00.0				-			(post tang)
4.5 2.74 4.5 2.74 4.5 2.74 4.5 2.74 4.5 2.74 4.5 2.74 4.5 2.74 4.5 2.74 6.7		2.63	2.63							1		:	C FUNHAY	1) . D/A (N	2.63	2.63 2.63	!										AX IPUM VEC						
4.5 2.74 4.74 4.74 4.74 4.74 4.74 4.74 4.74	64.	.60	3 6	0.0	00.0	00°0		0.0	00.0	00.0	00.0	0.00	TRAIL A	(N.HILE)	09.	09.	040	00.0	0.00	00.0	00.0	00.0	00.0	0.00	00.0	0ŭ•n	.						
4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4	11.7	6.79	27.7	00.0	00.0	00.0	000	0.00	00.0	00.0	00.0	00.0	o	32. A/A	- 1	62.7	64.7	000	00.0	00.0	0.00	00.0	00.0	00.00	00.00	0.00							
1, 7, 2, 31, 7, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	١.	۰, د۴.	ę.	00.0	0.00	00.6		00.0	0.00	3.90		00°0	D A/C FI	SETS UF	\$9.		59.	00.0	0.0	00.0	00.0	0.00	00.0	0.00	00.0	00*0							
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		17	7.0		0.03	30°0		0.0	6.03	1) • (1)(1)	; ; ;	00°0	LEA	JE S TIN 4	2.47	2.37	14.5	000	0.00	00.00	0.00	0.00	00.0	0.03	0.03	0.03	7075 1 104 1 E						
	-		23	(10.0)	06.0) () () () () () () () () () (3000	00.0			 • •	0.00	S Yearl	TIN VED	2	3.2		ر ع د د	0.43	00.0	3	20°0	() 0	3	0.10	59.9	STEXY THE						



Attachment C

MIAMI DELAY EXPERIMENTS STAGE 1 and STAGE 2

Data Packase No. 5
Miami International Airport
Airport Improvement Task Force Delay Studies
February 1980

TABLE 8
MIAMI DELAY EXPERIMENTS* STAGE 1

ATC

The bottom of the second of th

	•						1 1 1	
Experiment Number	Mode	Study Case	Arrival Runways	Departure Runways	Weather	Demand	System b	Near-term Improvements
	7					,		
	ASM			9L, 9R, 12	·· VFR1	Todays	. Todays	None
~	ASM	-		9R,	VFR1	1983,	Todays	None (Full G. A.)
11	A SM			9L, 9R, 12	VFR1	1983	1983	2
14	A SM	-	9L, 9R, 12	9L, 9R, 12	VFR1	1983 ^m	1983	1983° 8 (50% G. A. Reduction)
•	NS A		91. 9R		IFRI	Todavs	Todays	None
34	ASM	*	9L. 9R	9L, 9R, 12	IFR1	1983	Todays	None (Full G. A.)
0	ASM	4	96 .16		IFR1	1983 ^m	1983	g (50% G. A. Reduction)
35	A SM	4	9L, 9R	_	IFRI	1983 ^m	1983	1983° 8 (50% G. A. Reduction)
9	WSM	8	None	Т6	- IFR2	Todays	Todays	None
10	ASM	80	None	9L	IFR2	1983 ^m	1983	g (50% G. A. Reduction)
21	ASM	6	9L, 9R	9L, 9R, 12	IFR2	1983 ^m	1983	1983", B (50% G. A. Reduction)
, 2	A SM	2		27L, 27R, 30	VFR1	Today s	Todays	None
œ	ASM	. 2	27R.	27R.	VFR1	1983,	Tocays	None (Full G. A.)
36	ASM	7			VFR1	1983	1983	1983 (Full G. A.)
37	A SM	7		27L, 27R, 30	VFR1	1983	. 1983	1983" 6 (50% G. A. Reduction)
· ·	A SM	e		27R,	VFR2	Todays	Todays	None
38	ASM	m		27L, 27R, 30	VFR2	1983	Todays	None (Full G. A.)
17	ASM	m	27L, 27R	27R,	VFR2	1983***	1983	g (50% G. A. Reduction)
51 C	ASM			27L, 27R	VFR2	1983m	1983	1983", 8 (50% G. A. Reduction)
-2							,	
2	- A SM	··· •		27L, 27R	IFR!	Todays	Todays	None
39	A SM	S			IFRI	1983	Todays	None, (Full G. A.)
. 15	ASM		27L, 27R	.27L, 27R	IFRI	1983 <u>1</u>	1983	1983 (Full G. A.)
.02	ASM	3	27L, 27R	27L, 27R	IFRI	1983***	1983	1983" 8 (50% G. A. Reduction)
124	NS 4		27B 30	271, 278	VFR2	1983m	1983	1983P. E (50% G. A. Reduction)
;	700	- u	271 270	271 278	1021	Todaye	Today.	
#	WC V	,	417 'T17			1	- Anno 1	•

Study cases are defined in Figure III-1 of the Miami International Airport Technical Plan (Oct., 1978).

bran will describe impact of pre-1985 and post-1985 ATC systems on model inputs (as per report No. FAA-EM-78-8A).

CNear-term improvements are described in Appendix B of the Miami International Airport Technical Plan.

dAirfield Simulation Model.

*Improvement items 1, 2, 3, 7, 9, and 10 as defined by the Miami Delay Studies! Task Force on 3/16/79 are modeled in these experiments.

850% reduction in general aviation achieved by upgrading Opa Locka and Tamiami General Aviation Reliever Airports.

Improvement #6 is the use of 2 mile in-trail staggered parallel approaches.

• 1983 full schedule assumes no G. A. relocation out of Miami between 1978 and 1983.

All improvements of footnote "e" except for improvement item #10 (aircraft are being towed instead of taxied in 12A). M1983 limited schedule assumes a 50% G. A. reduction at Miami due to upgrading of reliever airports.

*Stage 1 experiments as revised by discussions with the Miami Delay Studies' Task Force since 1/24/79

7 ..

MIAMI DELAY EXPERIMENTS*

Departure Runways Weather Demand System Departure Runways Weather Demand Scenario Departure Runways N. a. Todays Dec. 1985 Today	Near-term Improvements	None			Pre-1985e, g		-	35 None	ļ
Weather n. a. n. a. n. a. n. a. n. a. n. a. n. a. n. a. n. a. n. a. n. a. n. a. n. a. n. a. n. a. n. a.	System System Scenario	- 1	1985m Todays	1985 ^m — Pre-1989			-19859 Todays		í
								į	
	Departure Runways	n, a.	n.a.			n, a.	n. a.		
	Study	n. a.	ස . ස	n. 8	n. s.	n.a.	n. e.	п.а.	n.a.
Study Case Arriva n.a. n.a. n.a. n.a. n.a. n.a. n.a. n.a. n.a. n.a. n.a. n.a. n.a.	Model	A DM	ADM	MOA	A DM	A DM	ADM	ADM	A DM
Model A DM A DM A DM A DM A DM A DM A DM A DM	Experiment Number	16	59		28	97	33.	33	32

emprovement items 1, 2, 3, 7, 9, and 10 as defined by the Miami Delay Studies' Task Force on 3/16/79.

\$50% reduction in general aviation achieved by upgrading Opa Locka and Tamiami General Aviation Reliever Airports.

hAnnual Delay Model

m1983 limited schedule assumes a 50% G. A. reduction at Miami due to upgrading of reliever airports.

Post-1985 Demand to be provided by the Miami Delay Studies ... Task Force. ...

*Stage 2 experiments as revised by discussions with the Miami Delay Studies! Task Force since 1/24/79 Post-1935 Improvement Package to be provided by the Miami Delay Studies' Task Force.

Attachment D

EXPERIMENTAL RESULTS
MIAMI STAGE 1 DELAY EXPERIMENTS

Data Packase No. 5
Miami International Airport
Airport Improvement Task Force Delay Studies
February 1980

This section presents the results of twelve selected Miami experiments. These results comprise all Stage 1 model runs that utilize "today's" ATC System scenario and taxiway system.

The results are arranged in sets to illustrate various comparisons requested by the Task Force members. VFR and IFR weather conditions have been separated along with each configuration:

Set 1: VFR EAST- Exp. Nos. 1 and 7.

Set 2: IFR EAST- Exp. Nos. 4, 34 and 6.

Set 3: VFR WEST- Exp. Nos. 2, 8, 3 and 38.

Set 4: IFR WEST- Exp. Nos. 5, 39 and 24.

Each experiment's summary contains a description of the objective, the runway configuration, the related comparison experiments and a table of results. Plots are also included which illustrate key comparisons between experiments.

Data Package No. 5 Miami International Airport Airport Improvement Task Force Delay Studies February 1980

TABLE 10

SET - 1 DEMAND

VFR-EASTERLY FLOW

EXPERIMENT NUMBER		RUNWAY 9R	RUNWAY 9L	RUNWAY	TOTAL
	ARRIVALS	142	167	4	313
1	DEPARTURES	104	167	31	302
	TOTAL	246	334	35	615
	ARRIVALS	196	194	5	395
7	DEPARTURES	130	200	40	3 70
	TOTAL	326	394	45	765
	ARRIVALS				
	DEPARTURES				
	TOTAL				
	ARRIVALS				
	DEPARTURES				
	TOTAL				
	ARRIVALS				
	DEPARTURES				
	TOTAL				
	ARRIVALS				
	DEPARTURES				
	TOTAL				
*	ARRIVALS				
	DEPARTURES				
	TOTAL				

EXPERIMENT NO. 1

Objective:

To obtain baseline delay estimates for the following runway configuration in VFR1 for 1978 demand:

Arrival Runways

Departure Runways

9L,9R,12

9R,9L,12

Related Comparison Experiments:

Calibration was performed using this easterly configuration. Inputs to this experiment were similar, but with 1978 demand. Experiment 4 examines this configuration with IFR1 weather and 1978 demand. Experiment 7 compares to this baseline case, wherein demand is increased to the 1983 level under VFR1 conditions.

Data Package No. 5

Miami International Airport
Airport Improvement Task Force Delay Studies
February 1980

TABLE 13

EXPERIMENT 1 RESULTS

•	TRAVEL						1 8.47							Ξ	DELAYS	930 06P	DELAY	2,3	4.3	3.7	3.9	2.5	5.1	1.6	2.4	•
	AVERAGE	TIME	THREST	TO GATE	2.9	3.34	2.91	3.07	3.01	3.11	2.97	3.00	0.00	GRAND	AVERAGE	IRR I	LAY	٠.	2,0	1.0	1,3	2.3	2.6	1.6	9.	0.0
			FIX TO	THRESH	10.64	11.99	10.67	10.68	11.56	12.26	10.83	9.91	00.0				⊶									
_					C)	8	6	0	0	ឆ	9	٥	0			RWY	CNG	0							0.0	_
DEMAND=78			DIF				1.9										PU								ij	
			DE-	HAND	18.0	37.0	47.0	37.0	27.0	40.0	40.0	35.0	9.0			RWY	CRS		·		• 1	• 1	•	•	.	•
SEPAR=78VFR1			TOT		16.8	34.2	48.9	36.0	29.0	38.5	41.6	34.0	9.0		S	TOT		2:1	3.9	3.2	3.7	2.2	4.7	1.4	2.1	÷
AR=78		URES	RWγ		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0		RTURE	Ŕ₩Y		0.0	0	0.0	0:0	0.0	0	0.0	0:0	0.0
		EPART	ΚWY	•	0.0	0.0	0.0	0.0	0:0	0.0	0.0	0	0.0		DEFA	RWY R		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NF I G=	ES	•	R⊌Y	12	0.1	0.4	8.9	1,1	3,0	0,6	0	3,0	2.0			RWY	12	E E	4	3,7	200	æ	1,3	1,3	۲,	0.0
78 CO	J RAT		RWΥ													×Μ	ž	5.0	2.6	ii Ci	4.3	ر. ان	6.1	1.5	5.0	-7
ROUTES=1978 CONFIG=A	AVERAGE FLOW RATE						21.0																		•	
ROUTI	JERAGI						7.0							۳			•	_	_	_				_		_
EXPER1	ě		· DIF	_	_	_	_	_	_			_	_	€		TAX		_	_	_	_	_	_	_		_
EXPE			品				_	_		_						REY	CRS								9.0	
RPORT			TOT				0 32.0									TOT									9.	
R. AI		IVALS	RUY RUY				0:0								IVALS	RWY RWY									0.0	
INTE		AKK	ΚUΥ				0:0								ARR	RWY									0.0	
MIAMI INTER. AII			RUY																						0:0	
I			ΚEY													_									.7	
			RUY	9 R	22.9	25.1	12.0	22.7	18.3	22.0	6.0	13.0	0.0			RWY	9R	1:0	1.2	•	0.1	1.6	7.0	0	4	0:0
			TINE		1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800~1900	1900-2000			TIME		1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900	1900-2000

EXPERIMENT NO. 7

Objective:

To assess the delay impact to aircraft in 1983 for the following runway configuration under VFR1 conditions, assuming no airport or ATC system improvements have been implemented:

Arrival Runways

Departure Runways

9L,9R,12

9R,9L,12

Related Comparison Experiments:

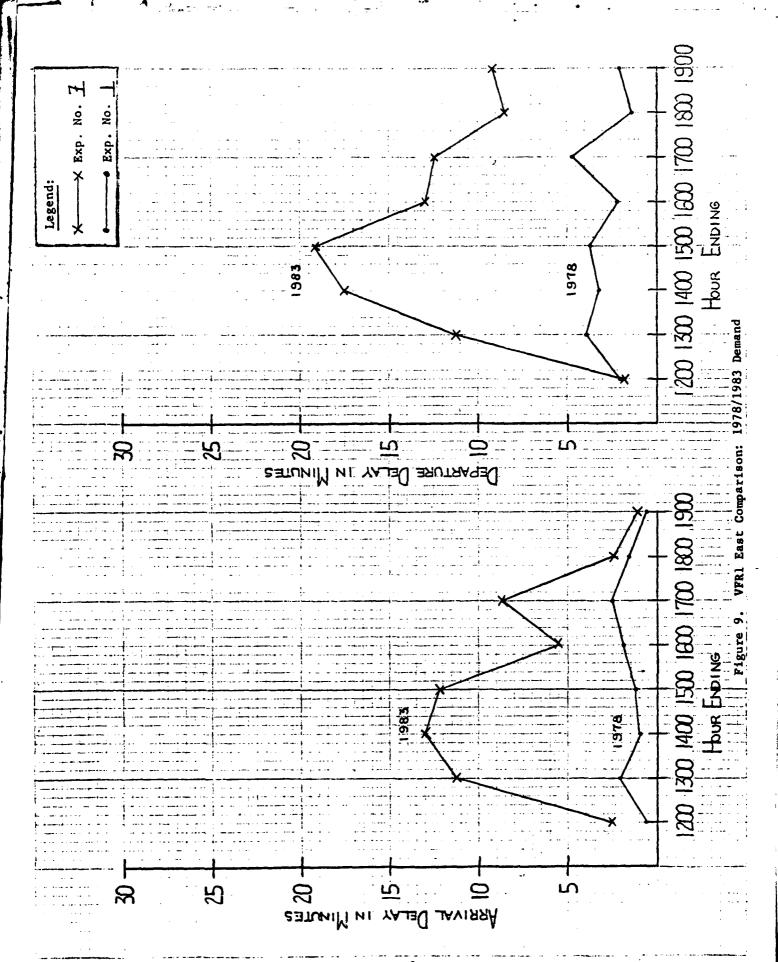
Prior experiment 1 serves as the 1978 demand level baseline for comparison to this experiment.

Data Package No. 5 Miami International Airport Airport Improvement Task Force Delay Studies February 1980

TABLE 12

EXPERIMENT 7 RESULTS

	2	77	2 - 5	5.97	17.01	36.68	30.98	18.77	17,83	14.04	14.51	6.00	,	١٨s	e.	٦X	0	'n	9	ić.	,	ญ	6.	ŭ	٥.
	TRAVEL	CATE	3			•••	1.2	_					TOTAL	DEL	IE	DELAY	Ň	12,	S	26.5	. 4	13,	0	10	Ī
	AVERAGE	Tueren	TO GATE	2.89	3.20	3.91	3.00	3.27	3.15	3.26	2.83	2.93	GRAND	AVERAGE	ጽ	DELAY	2.7.	1.5	3.7	M.S	5.7	9.1	2.5	1.3	3.0
	•		THEFSH	12.31	20.87	23.00	22.04	15,17	18.23	11.83	10.73	13.99			ĕ	DE	••	Ä	Ħ	ï	•	•	••	•	
												_			RWΥ	CNB	0.0	•	3.2	5	כע	•	4	M	0.0
D=83		n re		-4.1	-17.7	-7.4	21,9	13.4	7.4	-13,2	13.5	9			TAX	OUT.		0	1.8	1.9	1,1	6.	6.	•	•
DEMAND=83		190	OND	21.0	63.0	99.0	33.0	45.0	35.0	72.0	35.0	0.0			RWY	CRS		=		•	-:	٠,	•	• 1	0.0
UFR1		TOT		16.9	45.3	58.6	54.9	41.6	42.4	58.8	48.5	3.0		យ	TOT		1.8	11.3	17.6	19.2	13.0	12.5	8 13	9.2	æ
SEPAR=78VFR1	RFS	_		0:0										RTURE	<u>_</u>		0.0								
SEP/	REPARTIRES	>	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		DEPART	RWY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1FIG=/	_	; ·		23	4.6	7.0	5.8	4.5	5,3	5.4	5.1	0.0			_	12									
,8 CO	RATES			11.7									YS			76									
S=197	FLOW			2.9									_			9R 9									
EXPER7 ROUTES=1978 CONFIG=A	AVERAGE	מנב		-10.2									æ			S ZI	_			7			•		_
ER				55.0 -												CRS II	•	_	_	•	•	•	•	•	_
					59.0 60												2.6			٠.	ທຸ	.,			_
IRPORT	U.	× †nī		_	_	_	_	_	_	_	_	_		s	Y .TOT		0.0								
ER. A	2 TUAI	3		0.0 0.0	0	0	0	0	0		0	0		AKRIVALS	Y RU		0.0								
INI	4													Ā											
HIAHI INTER. AI			-	0.0			,								_	12									
				8 22.0																					9°.0
		\ \ \ \	ð	22.8	•			-	•	•	·				RWY	%					•				
		11116	!	1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900	1900-2000			TIME		1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900	1900-2000



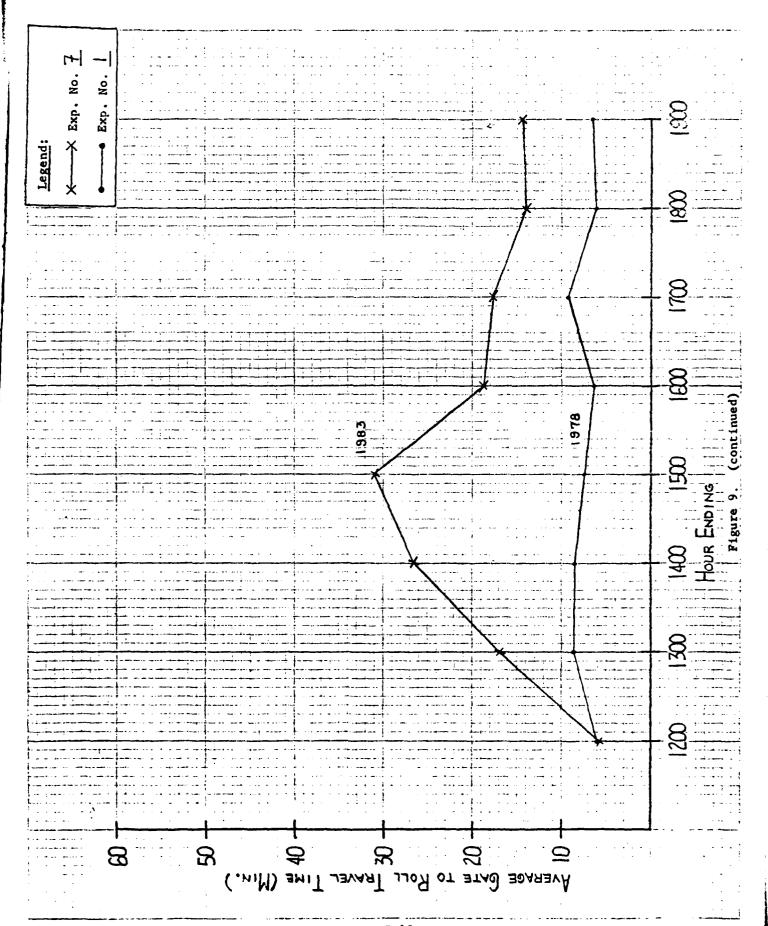


TABLE 13

SET - 2 DEMAND IFR-EASTERLY FLOW

EXPERIMENT NUMBER		RUNWAY 9R	RUNWAY 9L	RUNWAY 12	TOTAL
	ARRIVALS	133	135	0	268
4 AND 6	DEPARTURES	102	139	29	270
	TOTAL	235	274	29	538
	ARRIVALS	196	151	0	347
34	DEPARTURES	128	166	38	332
	TOTAL	324	317	38	679
	ARRIVALS				
	DEPARTURES				
	TOTAL				
	. ARRIVALS				
	DEPARTURES				
	TOTAL				
	ARRIVALS				
·	DEPARTURES				
	TOTAL				_
	ARRIVALS				
	DEPARTURES				
	TOTAL				
	ARRIVALS				
	DEPARTURES				
NOTE - Parent	TOTAL]

NOTE: Runway closure during the IFR-2 time period in Experiment No. 6 is performed by the model.

EXPERIMENT NO. 4

Objective:

To obtain baseline delay estimates for the following runway configuration in IFR1 for 1978 demand:

Arrival Runways

Departure Runways

9L,9R

9R,9L,12

Related Comparison Experiments:

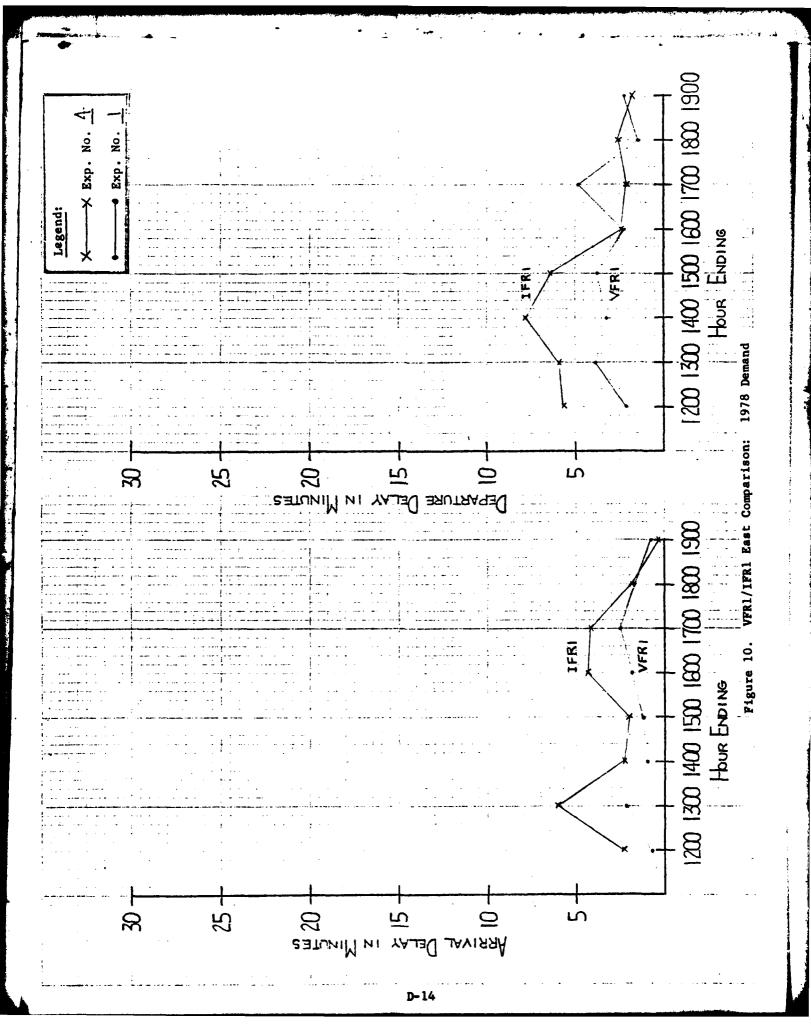
Prior experiment 1 examines this configuration with VFR1 weather and 1978 demand.
Experiment 6 assesses the delay impact of moving from IFR1 to IFR2 conditions.
Experiment 34 also compares to this study case, wherein demand is increased to the 1983 level under IFR1 conditions.

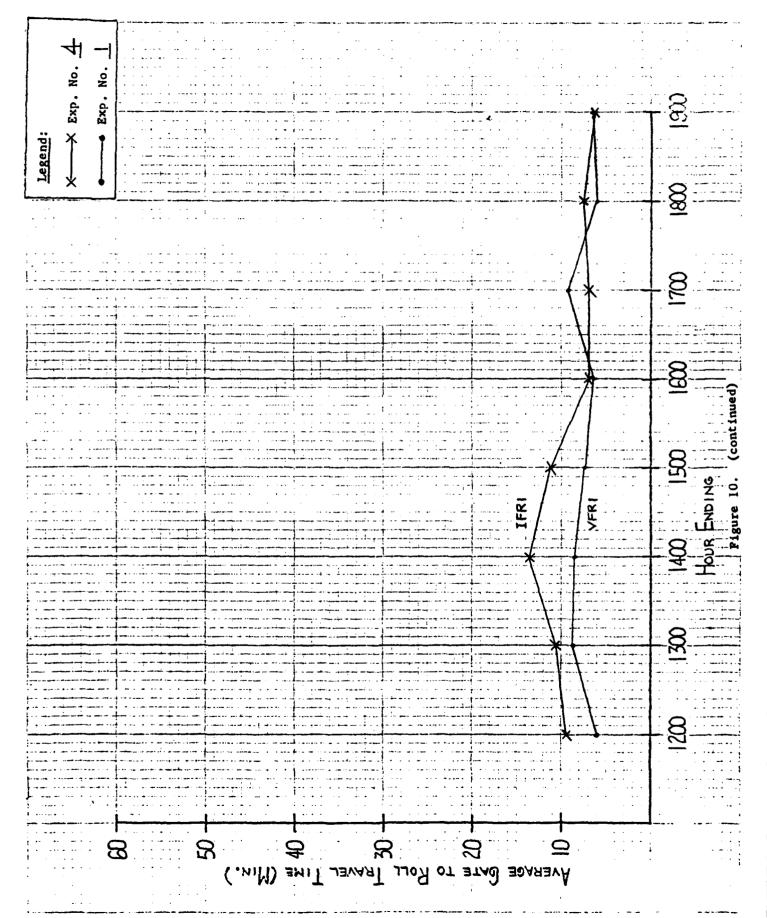
Data Package No. 5
Miami International Airport
Airport Improvement Task Force Delay Studies
February 1980

TABLE 14

EXPERIMENT 4 RESULTS

	TRAVEL		GATE TO	ROLL	9.57	10.68	13.84	11.14	6.74	6.94	7,51	6.34	4.50	TAL	ELAYS	DEP	IEL.AY	U.,	6.1	8.9	7.2	2.6	4.5	9.8	2.0	7.
	AVERAGE TR	TIME	THRESH	TO GATE	2.95	3.00	3.43	2.98	3.43	3.01	3.06	3.66	09.	GRAND TO						2,7	6.5	4.7	2	8.1	ល	o.
	*		FIX TO.	THRESH	12.47	15.96	12.21	11.60	14.02	13.92	11.06	9.57	1.24				_									_
8					Çį.	4	1.6	89	m	8.	.,	۰.	0.												3 0.0	
ND=7			DIF																							
DEM			DE	MANE	16.0	35,0	46.0	31,0	21,0	32.(36.	32,6	%			RWY	CRS		٠	•	7	٠	Ÿ	٦	•	•
IFR1			TOT	_	15,8	27.6	47.6	33.8	23,3	30.2	37.7	31.0	9.0		S.	TOT		5.6	5.8	7.8	6.4	2.4	2.1	CA EA	1.6	•
4R=78		URES	RWY		0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0:0		RTURE	RWY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0
SEP		PART	_ }		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0		DEPA	RWY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0
F16=4	យ	DE	Y	12	1.0	1.9	9.2	1.9	0	2.7	4.3	0.E	2.0			_			_		_	_		_	1:1	_
CON	RATES			94 1										໌		_									1.9	
=1976	FLOW		×	76	.9 12	.6 13	.3 17	2 2	.1	5 17	.4 14	.0 15	0	DELAI				•	_	_		_	_		_	_
UTES	AVERAGE I		3	9 R										~		3	9 R		7	0	4	74	CI	M	1.3	
EXPER4 ROUTES=1978 CONFIG=A SEPAR=78IFR1 DEMAND=78	AVER		DIF		15.55	3.8	1.7	5.	2.6	1.7	1.5	1	Ċ	AVER		TAX	NI	•	ç	'n	Ç	'n	•	7		Ö
XPER.			DE-	MAND	48.0	43.0	28.0	39.0	30.0	36.0	20.0	24.0	0.0			RWY	CRS	o.	•	•	•	•	•	•	0.0	0.0
PORT E			TOT				29.7									rot		7.4	0.9	2.3	5.0	4.3	4.2	1.7	M	•
		8	•		_	_	_	_	_	_	_	_	_		LS			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0
MIAMI INTER. AIR		RRIVA	<u>`</u>		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		RRIVA	RWY RWY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NI I		⋖	7	12	0	•	0	0	0	0	0	0	0		æ										0.0	
HIAH																									ų.	
				8																						
			REY	9R												RWY									٠.	
			TIME		1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900	1900-2000			TIME		1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900	1900-2000





Objective:

To assess the delay impact to aircraft in 1983 for the following runway configuration under IFR1 conditions, assuming no airport or ATC system improvements have been implemented:

Arrival Runways

And the second s

Departure Runways

9L,9R

9R,9L,12

Related Comparison Experiments:

Prior experiment 4 serves as the 1978 demand level baseline for comparison to this experiment.

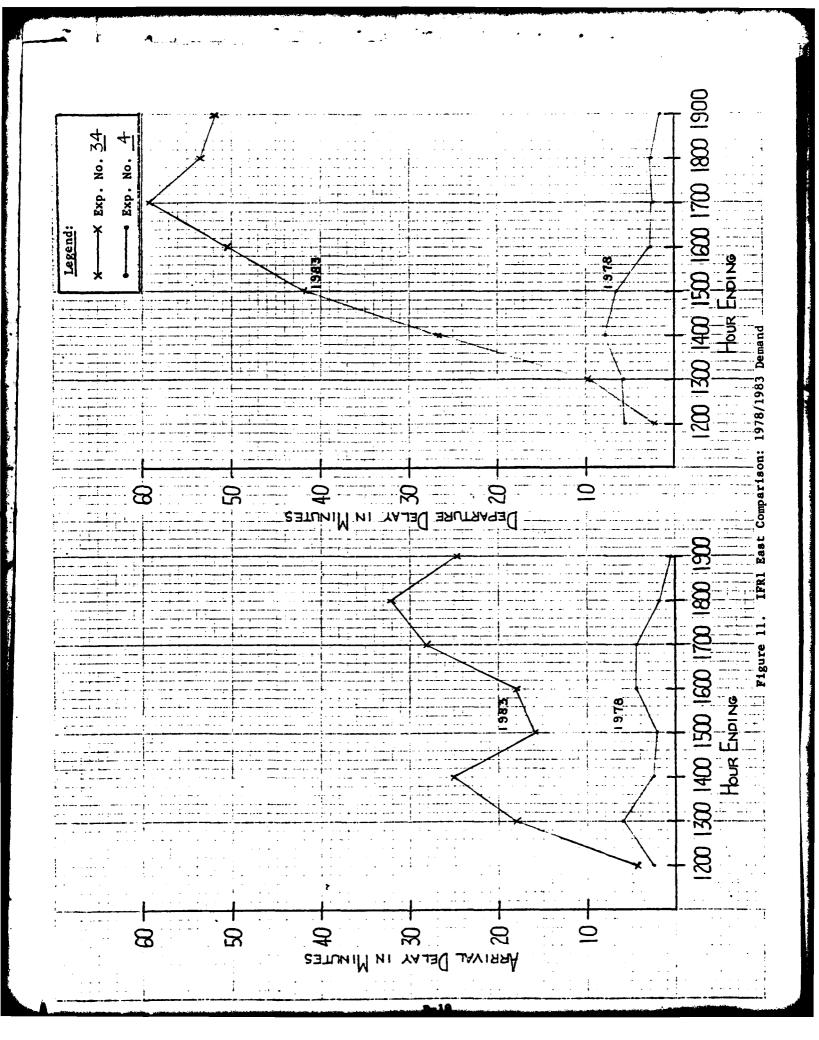
Data Packase No. 5
Miami International Airport
Airport Improvement Task Force Delay Studies
February 1980

RESULTS EXPERIMENT 34

DELAYS DEP DELAY 10.9 29.7 61.2 61.2 88.4 1112.7 1112.7 112.7 AVERAGE TRAVEL TIME THRESH 10 GATE 3.12 3.38 3.38 6.22 8.22 9.82 6.53 10.11 12.10 10.08 GRAND T ARR DELAY 18.3 18.3 28.0 21.1 24.6 31.4 33.5 33.5 FIX TO THRESH 14.19 27.54 34.78 25.80 27.90 37.87 41.25 34.31 27.30 -11.9 -30.9 -30.9 -14.1 -3.2 -29.7 -2.3 MIAMI INTER. AIRPORT EXPER.-34 ROUTES=1978 CONFIG=A SEPAR=78IFR1 DEMAND=83 22.7 23.7 23.7 23.7 23.7 17.0 58.0 58.0 32.0 33.0 67.0 15.1 36.7 22.1 26.5 29.8 27.3 57.6 DEPARTURES WY RWY TOT 000000000 DEPARTURES RWY RWY 000000000 000000000 000000000 RWY AVERAGE FLOW RATES RWY 9L12 2253 2353 247 247 247 9RWY 9RWY 11.9 30.7 30.7 556.8 72.8 108.4 78.1 -12.9 -15.1 -15.1 -15.1 -5.5 AVERAE 372372932 7873872932 HAND 142.0 15.0 15.0 15.0 15.0 15.0 15.0 4.3 18.0 115.9 118.0 128.1 32.1 19.7 000000000 ARRIVALS RWY RWY ARRIVALS RWY RWY 000000000 000000000 000000000 REC 23987 234.9 234.9 201.1 201.7 201.7 300 300 35.7 37.7 19.7 1100-1200 1200-1300 1300-1400 1500-1500 1500-1600 1600-1700 1800-1900 1900-2000 1100-1200 1200-1300 1300-1400 1400-1500 1500-1600 1700-1700 1800-1900 TIME

ROLL 6.66

15.69 34.01 65.72 92.92 116.84 118.60 121.87



34

Objective:

To assess the delay impact to aircraft in 1978 for the following runway configuration under IFR2 conditions:

Arrival Runways

Departure Runways

None

9L

Related Comparison Experiments:

Prior experiment 4 examines this configuration with IFR1 weather and 1978 demand.

(An IFR1/IFR2/IFR1 situation was used for this experiment, with the IFR2 conditions lasting from 1300 to 1400 hours. This enables the recovery of the airport from the IFR2 deterioration to be studied.)

Data Package No. 5

Miami International Airport
Airport Improvement Task Force Delay Studies
February 1980

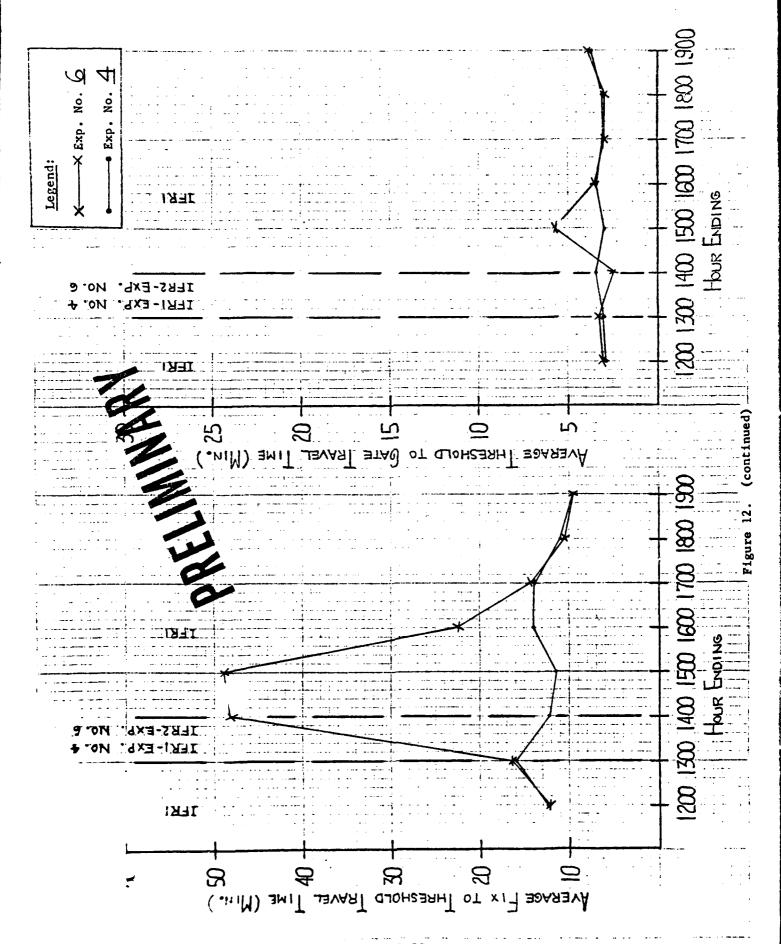
EXPERIMENT 6 RESULTS

MIANI INTER. AIRPORT EXPER-S RUDIES 1975 FOR TO TITAL STEEL BRANKE ALTERNATION OF THE STEEL STEEL AND STEEL BRANKE STEEL

DESOVE L.		6414 111		יי מנו	¥.53	 - - - - - - - -		76.50	70 701	100170	24.4	47.42	11.89	4.64	4.62	4.07	6,4	1.44		101	FIAVE		1111	ELAY	5,7	5.4	37.6	71.6	03.0	80.3	43.0	7.6	C,		•	<u>ء</u>	0.0	0.0	0.0
AVERAGE TR					5.03	3.15	2,38		C.3	3 6		₹ 6. 77	3,80	00.0	000	00.0	00.0	0.00	00.0	GEAND TH	AVERAGE D									4.5		,ů,			•	2	0.0	0.0	0.0
		61 X 14	1116-611		67.4.7.1 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	16.38	4H . 50	49.00	37.11.		/1.1	10.10	200	00.0	00.0	00.0	00.0	00.0	00.0		•											~							
		1111	;	•	•	>	2.07	o. 1	16.0	10	> 1	73.0	0	1.0	7.0	0.0	0.0	0.0	0.0																		0.0		
							i								_		_	_	0.0)))		
						7 ·	?	~ ~ ~ ~	37.0			7	2.7	0.01	:>	3,0	٥. بر	<u>ه</u>	0.0		ທ	_								32.6			Ņ	0.0	0.0		つ : こ :	٠ د	? ၁
	:: :::	32																	0.0		DEPARTURES	RWY											္	0	0.0	,	3))	0.0
	=	32													0.0						DEFA	ŔΨY		<) (9	0	o	0	0	၁ ·))	ت. ت:	0	0.0		ه د د	٠ د د	o 0
.· =	-	32				: :	2 :		3.0). -		-	٠ - -	0 N	0.1	0	0	ာ	0.0					-	1 0	7.07))	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	n -	* •	F .))	ن ت	0.0			> :	် ၁
THE BUT																			0	LAYS													7	့	0	0		2 4	•
क्षिति क्षेत्रक विद्यापति क्ष्म		3													O •					36 DE		RWY	9. R	•	•		, c		ָּ	\		``	7	o.	0.0	0.0) <))
		Ξ		0.2-	3	100		20.0	J. 4.	o. M	1.0		•	3 ·	9 6))	0	0	0.0	AVER			Z																
		Ë	JAKE	4H.0	43.0	38.0		2	30.0	36.0	20.0	3.45) ·	•	3	9	9	0			RHY	CRS	9	•	•	•	•	•	•	•	•	•	•	0	0.0	0		;
				43.0	45.0	0	2	-	4.0	39.0	21.0				•						į	<u> 101</u>		2.2	4												0		
3 1011		3		0.0		0.0			9					•			•				AKKIVALS	ΚW		0.0									•				0		
7	THE LANGE	3		0:0	0.0						0.0										A N	Z Z		0.0	_												0		•
	2	4	12))		0:0	٠						•				E		•			q										0.0		
	?	3	ا ا									13.0								 .	4	¥			13.51		72			•		•		•			0.0		
	2177	3	*	18.0	25.0	0	24.0		3 (200	9	11.0	0.0					•	•		3	2	8	1.2	8.7	18.7	43.3	11.1	7.3	1.1	•	0.0				0	0.0	0.0	
	7 T T	361		1100-1500	1200-1300	1300-1400	1400-1500	1500-1400	0001-007	00/1-0051	1700-1800	1800-1900	1900-2000	2000-2100	2100-2200	0010-0000	2300-2400	2400-2500	0001-001-		1711	J ET -	•	1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900	1900-2000	2000-100		0077-0017	2200-2300	2300-2400	2400-2500	

PRELIMINARY

D-24



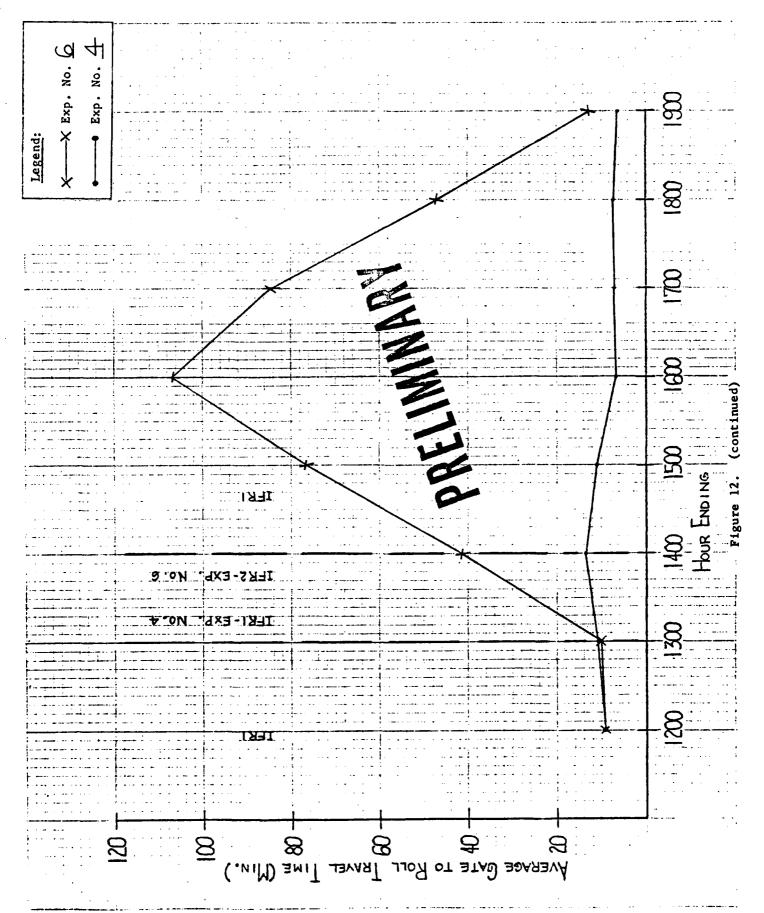


TABLE 17

SET - 3 DEMAND

VFR-WEASTERLY FLOW

EXPERIMENT NUMBER		RUNWAY 27R	RUNWAY 27L	RUNWAY	TOTAL
	ARRIVALS	162	24	130	316
2	DEPARTURES	169	133	0	302
	TOTAL	331	157	130	6 18
	ARRIVALS	192	31	172	395
8	DEPARTURES	195	172	3	370
	TOTAL	387	203	175	765
	ARRIVALS	202	114	0	316
3	DEPARTURES	169	133	0	302
	TOTAL	371	247	0	618
	ARRIVALS	240	155	0	395
38	DEPARTURES	196	171	3	370
	TOTAL	436	326	3	765
	ARRIVALS				
	DEPARTURES				
	TOTAL				
	ARRIVALS				
	DEPARTURES				
	TOTAL				
	ARRIVALS				
	DEPARTURES				
	TOTAL				

Objective:

To obtain baseline delay estimates for the following runway configuration in VFR1 for 1978 demand:

Arrival Runways

Departure Runways

27L,27R,30

27L,27R,30

Related Comparison Experiments:

Experiment 5 examines this westerly configuration with IFR1 weather and 1978 demand.

Experiment 3 assesses the delay impact of VFR2 conditions and 1978 demand.

Experiment 8 compares to this baseline case, wherein demand is increased to the 1983 level under VFR1 conditions.

Data Packase No. 5
Miami International Airport
Airport Improvement Task Force Delay Studies
February 1980

ABLE 18

EXPERIMENT 2 RESULTS

	AVERAGE TRAVEL	TIME	THRESH		10.79 3.67 5.47	5.07	3.46	4.06	4.42		3.81			GRAND TOTAL	AVERAGE DELAYS	ARR DEP	DELAY DELAY	1.7 2.5	2.8 4.7	.8	2.1 2.2	1.6 3.5	2.2 7.0	.6 1.6	1.3 2.3	6 0.0
MAND=78			- DIF		.0 -2.0									•		TAX	CRS OUT CNG	æ	1.5	1.0	1.1	2.3	1.7	'n	80	.,
EXPER2 ROUTES=1978 CONFIG=B SEPAR=78VFR1 DEMAND=78		G	TOT		0.0 16.0 18.0	35.8	48.6	35.1	26.3	43.0	38.7	35.1	10.2		UNES	10		1.7	3.2	0.0 2.1	1.0	1,2	ι.	1,3	1.4	Ç
G=B SEPAR		DEPARTURE	RWY RWY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		DEPART			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
978 CONFI	OW RATES		RWY	275	5.0 0.0	17.0	26.0	13.0	12.0	16.0	20.7	13.3	3.0	AYS		ŔIJΥ	27L 30	'n		2.1	œ		8	1.0	8	C
ROUTES=1	AVERAGE FLOW RATES			27R	-2.1 11.0	1.1 18.8	1.0 22.8	1.7 22.1	.8 14.3	.9 27.0	0.0 18.0	0.0 21.8	0.0	VERAGE DE			27R			.1 2.0						
EXPER2	Œ			HAND	51.0	43.0	36.0	41.0	41.0	43.0	29.0	29.0	1.0				CRS IN	•	ö	o.	-:	7	•	0.0	°.	0.0
AIRPORT					0.0 48.9	0:0	0.0	0.0	0:0	0.0	0	0.0	0.0		ALS	RWY TOT				0.0						
MIAMI INTER. AIR		AKRI	INY RWY RWY		20.0 0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0		ARRIC	WY RWY RWY	30			0.0 6.						
MIA			RUY	275	24.9 4.0 2	4.0	1:0	4.0	3.0	4.0	1.0	2.0	1.0		•	Y RWY R	27R 27L	9 5.	8.	.4 1.6	.1 1.5	.9 1.9	.4 1.3	.7 0.0	.7 0.0	0.0
			TIME RU	2						1600-1700 22				•		TIME RW				1300-1400						

Objective:

To assess the delay impact to aircraft in 1983 for the following runway configuration under VFR1 conditions, assuming no airport or ATC system improvements have been implemented:

Arrival Runways

Departure Runways

27L,27R,30

27L,27R,30

Related Comparison Experiments:

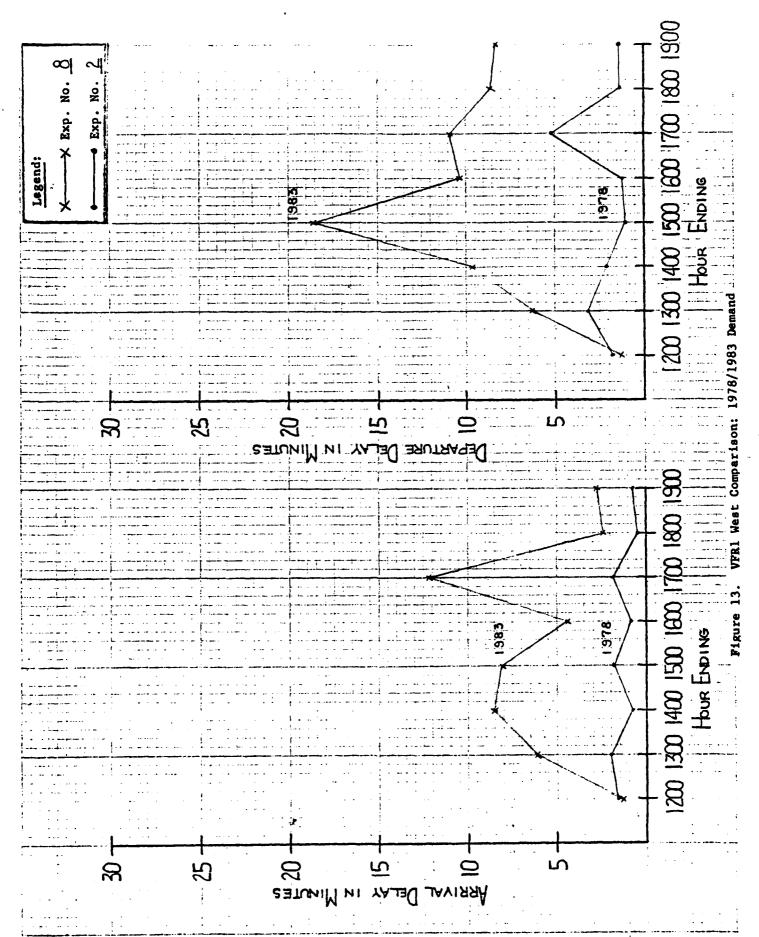
Prior experiment 2 serves as the 1978 demand level baseline for comparison to this experiment. Experiment 38 assesses the delay impact of VFR2 conditions and 1983 demand.

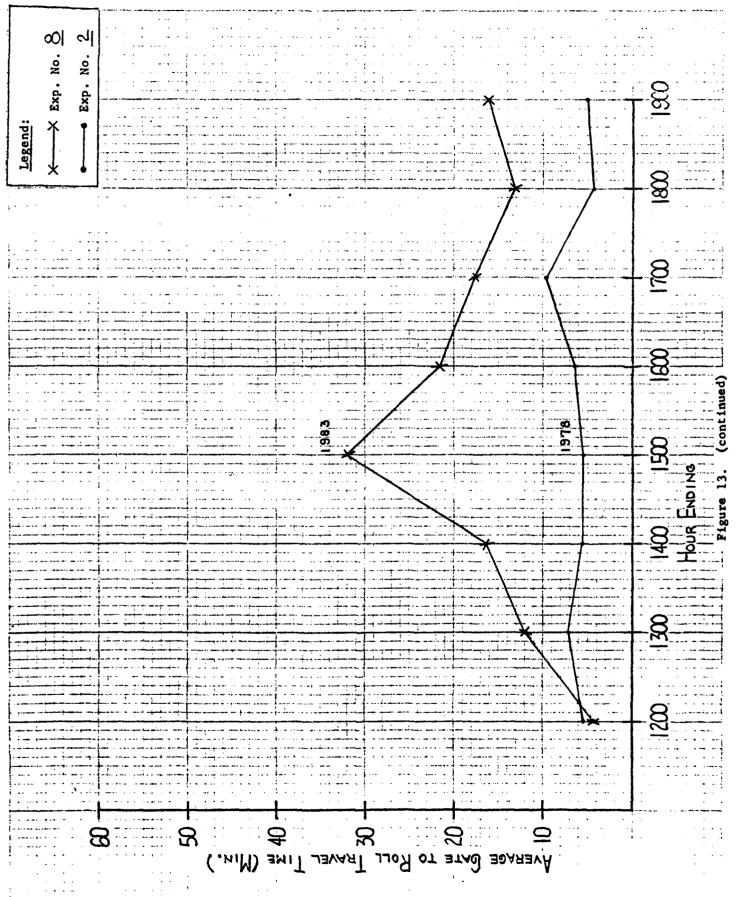
Data Package No. 5
Miami International Airport
Airport Improvement Task Force Delay Studies
February 1980

TABLE 19

EXPERIMENT 8 RESULTS

•	IKAVEL		GATE FO								13.07	16.14	11,45	5	IJELAYS	DEP	DELAY	1.7	9.6	13.8	29.0	18.6	14.5	10.2	13.4	7.4
	AVERAGE	TIME	THRESH	TO GATE	4.26	4.75	4.16	4.47	4.52	4.29	3.71	4.29	2.89	GRAND	AVERAGE	JRR.	DELAY	1.5	7.1	0.6	8.5	5.0	12.4	2,5	3.2	2,3
			FIX TO	THRESH	10.63	15.09	17.31	17.11	13.51	20.69	11.59	10.52	11.76				_									
33			L L		-4.3	0.6	9.1	9.5	3.6	0.4	9.6	2.0	1.0				T CNG									-
DEMAND=83																•) OUT									
				MAN	7 21.0	0 63	99 6	5 33,	6 45	0 35,	4 72	9 35,	o o	•			CRS	•								
78VFR		G	TOT		0 16.7										RES	TOT				9.6 0						
SEPAK=78VFR1		RTURE	RWY RWY		0.0										PARTU	RWY				0.0						
3S 8=		DEPAF	RΣ		0.0										DEF	RWY				0.0						
ONFIG			ΚW	30	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0			RWY	30	0.0	1.4	2.1	0.0	0:0	4.6	0.0	0.0	0.0
778 C	JW RA		ΚWY	37 2	6.8	32.4	29.8	14.0	22.4	12.6	34.9	19.1	0.0	AYS		ŔΨY	271	9.	3,3	1,8	1.2	2.4	2,5	4.3	.7	0.0
TES=19	AVERAGE FLOW RATES		RW≺	27R	6.6									ביז		RWY	27R	1.7	11,2	18.8	27.1	17,3	15.3	13.8	13.4	•
EXPER8 ROUTES=1978 CONFIG*B	AVERA		DIF		-6.1	2.8	-4.6	6.9	-15.4	16.4	5,5	C)	2.7	AVERA		TAX	Z	••	.7	4.	m	4.	7	٠.	ייו	0.0
XPER			DE-	MAND	55,0	58.0	52.0	44.0	71.0	38.0	46.0	31.0	0.0			RWY	CRS	•	•	•	τ.	7		•	0.0	0.0
RPORT E			TOT		48.9	8.09	47.4	50.9	55,6	54.4	40.B	33.5	2.7			TOT		1.4	6.3	8.6	8.1	4.4	12.2	2.4	2.7	2.0
AIRF	•	ALS	RWY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	•	ALS	ΚWY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MIAMI INTER. AII		ARRIV	RWY RWY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		ARRIV	RWY RWY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AMI I					22.2	24.8	18.0	21.0	27.3	25.7	15.7	14.6	2.7				30	1.8	4	1.2	1.2	6.0	20.9	٥.	2.0	2.3
H			RHY	27.2	4.8	6.2	3.0	0.0	0.4	0.4	3	2.0	0.0		•		27									
			_	27R	21.9	29.8	26.4	24.9	24.3	24.7	23.1	16.9	0.0			KWY .			•	14.6						
			TIME		1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900	1900-2000			TINE		1100-1200	1200-1300	1300-1400.	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900	1900-2000





Objective:

To assess the delay impact to aircraft in 1978 for the following runway configuration under VFR2 conditions (This experiment also establishes baseline delay estimates for comparison to experiment 38):

Arrival Runways

Departure Runways

27L,27R

27L,27R,30

Related Comparison Experiments:

Prior experiment 2 examines this confiduration with VFR1 weather and 1978 demand.

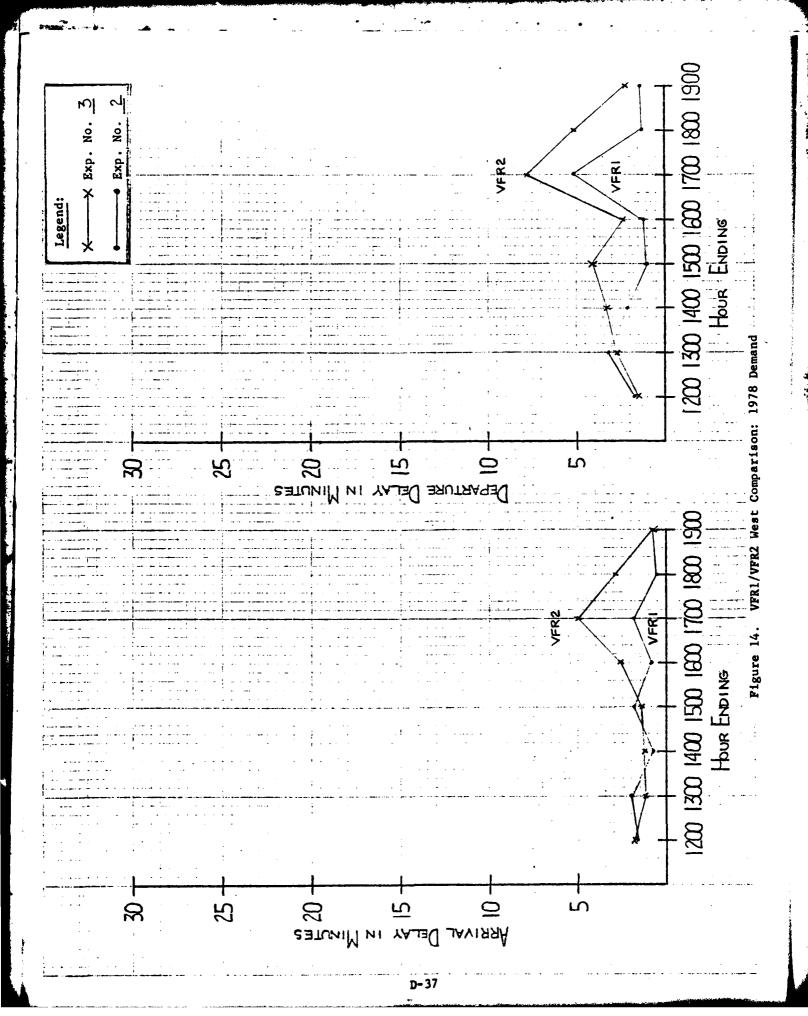
Experiment 38 also compares to this study case, wherein demand is increased to the 1983 level under VFR2 conditions.

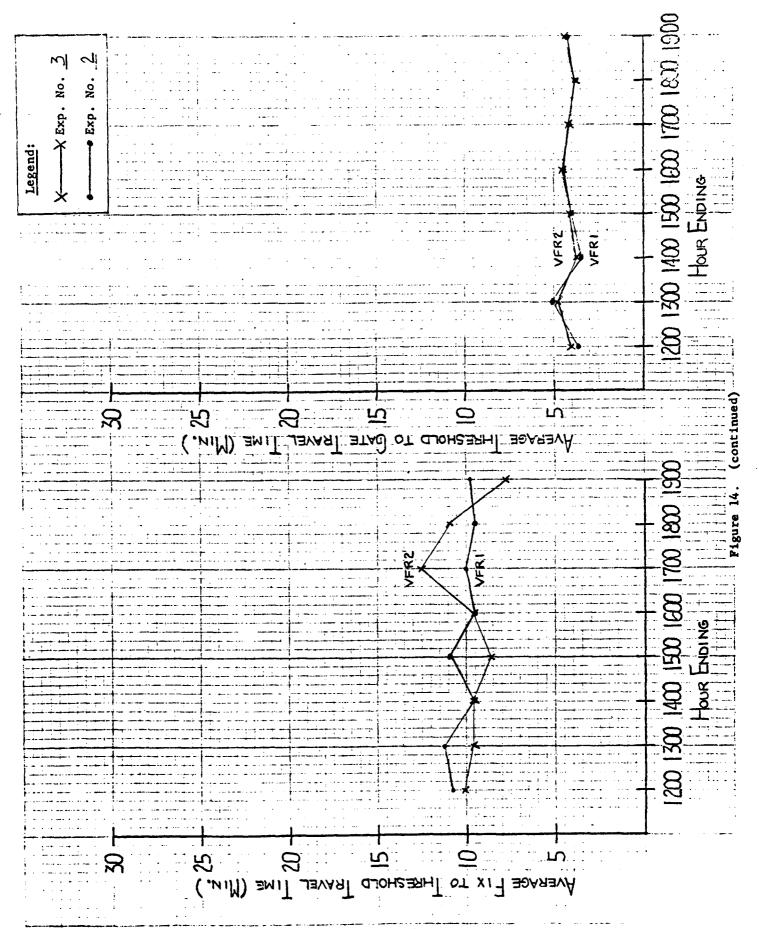
Bata Packase No. 5
Miami International Airport
Airport Improvement Task Force Delay Studies
February 1980

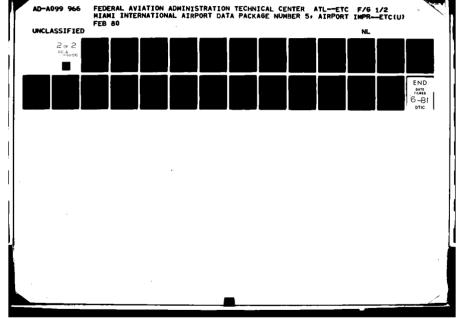
TABLE 20

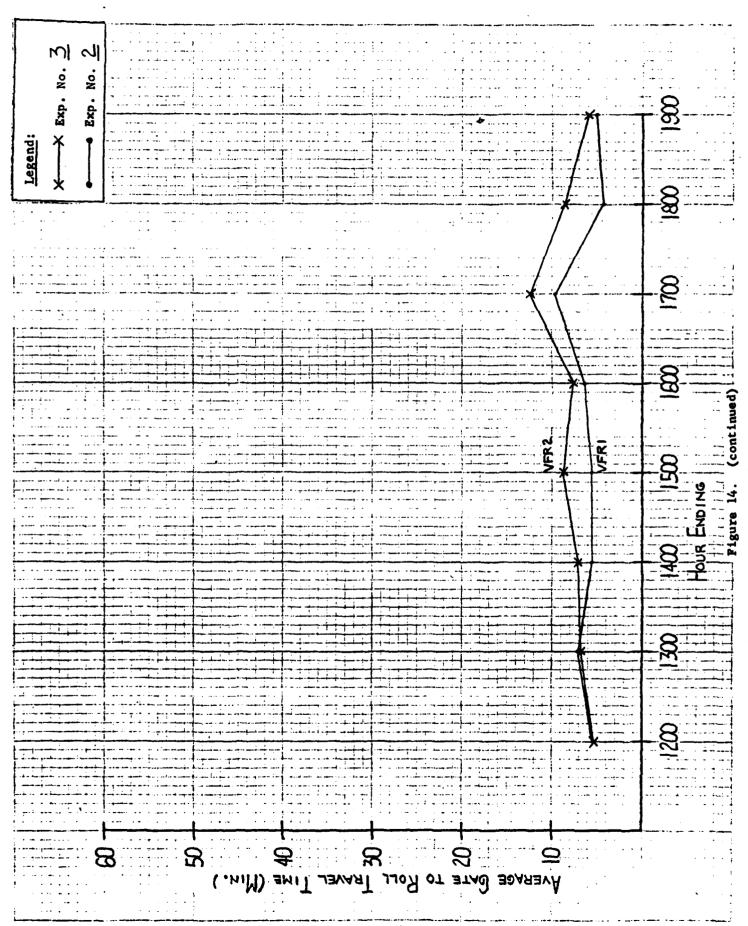
EXPERIMENT 3 RESULTS

	AVERAGE TRAVEL					4.77 6.81								_	AVERAGE DELAYS		r DELAY									
	AVE					9:26									₹	AR	DELAY									
82			ı.		2,3	7	1.0	1.2	1.2	2.5	a.4	0.1	0.0				T CNG									
DEMAND=78			· DIF														100									
2 DEN			늄	MAN	7 18.	3 37.0	0 47.	2 37.	8 27.	5 40.	5 40.	0 35,	6 0				CRS									
SEPAR=78VFR2			TOT			36.3									ES.	TOT								5.2		
PAR=7		TURES	RWY RWY			0.0									ARTUR	RWY T								0.0		
B SE		EPAR	RΕΥ			0.0									DEP	RWY RI		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C
NF I G=	ES		RWY	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			RWY	30	0.0	0.0	0.0	0:0	0.0	0.0	0.0	0.0	Ċ
78 CO	W RAT		RWY	27 ′	л 0	17.0	26.0	13.0	12.0	14.6	22.4	13.0	3.0	AYS		RWY	27		1.9	S S	1,5	1.2	1.3	1.4	8	Ç
ES=19	E FLOI					19.3								_			27R									
-3 ROUT	AVERAGE FLOW RATES		DIF			0.0								U		TAX	N.I		₹.	~	•	4.	4.	•	7	9
(PER.			-3	_	_	48.0	_	_	_		_		_				CRS	0.0	0.0	0.0	o.	•	0:0	0:0	0:0	0
						48.0 4										TOT A								5.9		
AIRFORT						0.0									S									0.0		
HIAMI INTER. AL		それる	RWY RWY			0.0								•	RIVA	RWY RWY		0:0	0.0	0.0	0:0	0:0	0:0	0.0	0:0	0
I		ď	¥ ×	0		0.0									A	Y R	30									
HIAH																RE	7	0 . 6	S.	7	0 m	0 8	0	0	0	9
						0 23.0										RE)	27R 27L	ท	8	•	cı Cı		9 1.	5 0	·	d
			ZEX	2		25.0										RUY										
			TIME		1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900	1900-2000			TIME		1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900	1000-2000









Objective:

To assess the delay impact to aircraft in 1983 for the following runway configuration under VFR2 conditions, assuming no airport or ATC system improvements have been implemented:

Arrival Runways

Departure Runways

27L,27R

27L,27R,30

Related Comparison Experiments:

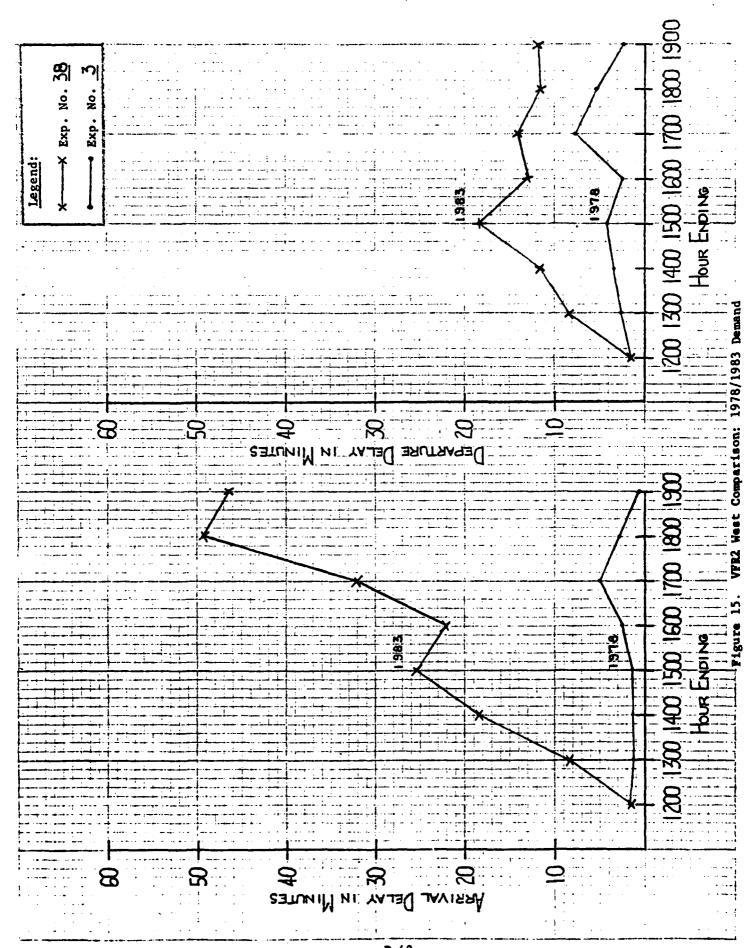
Prior experiment 3 serves as the 1978 demand level baseline for comparision to this experiment. Prior experiment 8 examines this configuration with VFR1 weather and 1983 demand.

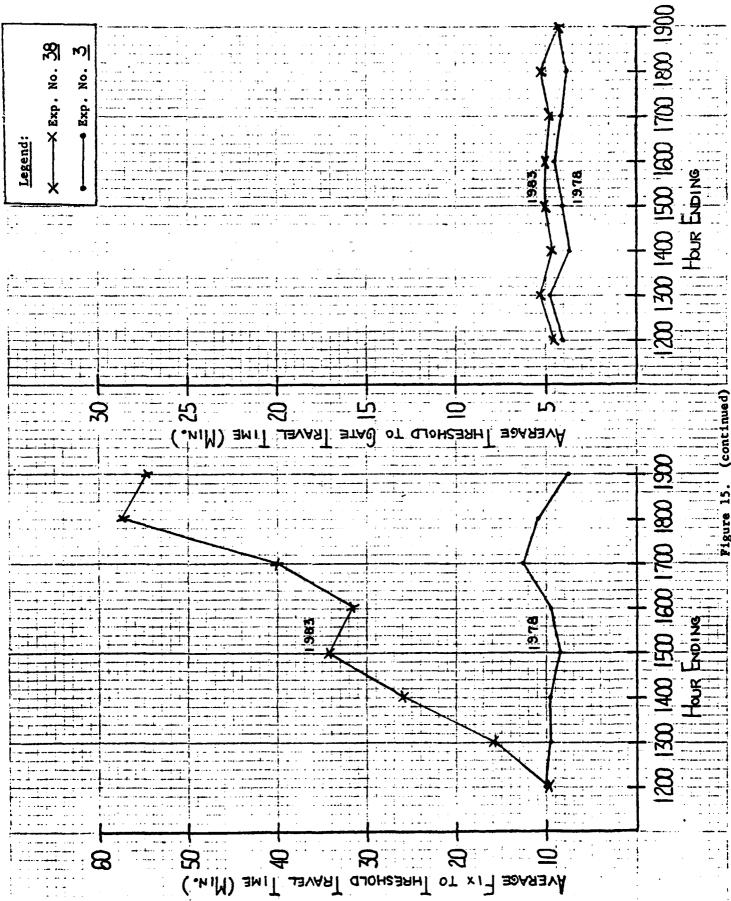
Data Package No. 5
Miami International Airport
Airport Improvement Task Force Delay Studies
February 1980

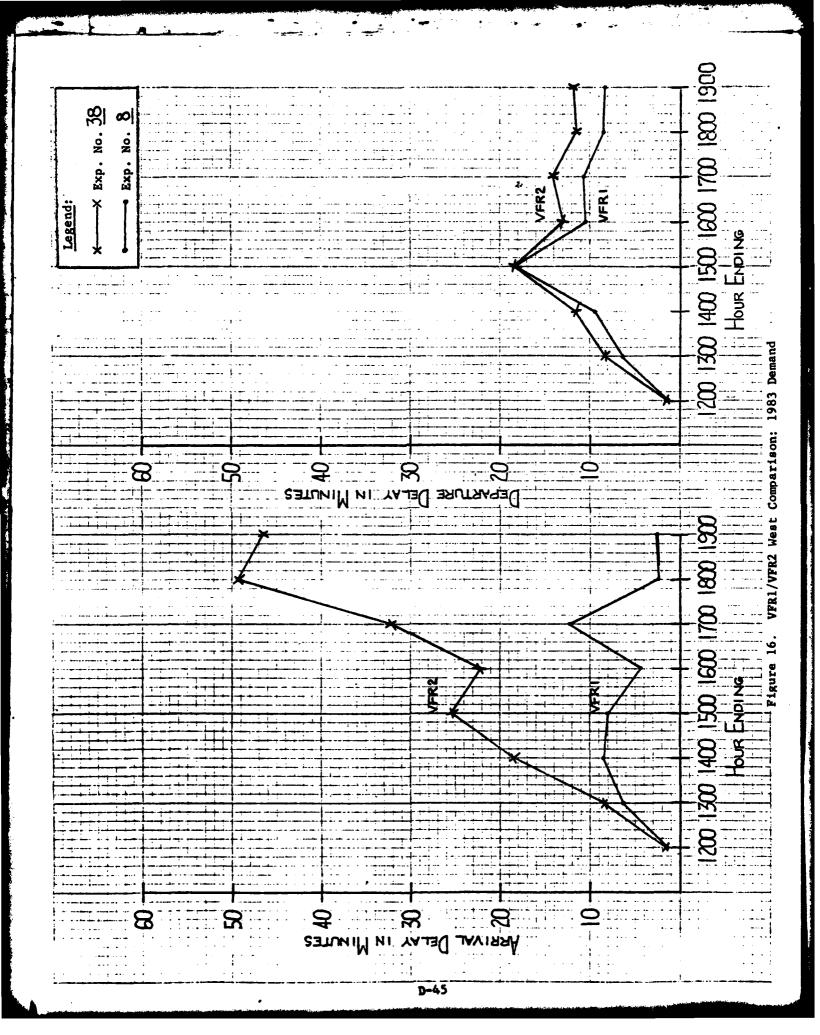
38 RESULTS **EXPERIMENT**

GRAND TOTAL
AVERAGE DELAYS
ARR.
DELAY
DELAY
1.8
2.1
9.3
11.6
19.0
19.1
26.3
32.7
22.8
32.7
32.7
47.2
50.0
14.4
47.2
59.5 AVERAGE TRAVEL TIME THRESH GATE TO GATE ROL 4.58 4.56 21.4.66 21.0 35.06 25.06 FIX TD THRESH 9.91 15.91 34.30 34.30 34.30 34.30 57.10 56.50 MIAMI INTER. AIRPORT EXPER.-38 ROUTES=1978 CONFIG=B SEPAR=78VFR2 DEMAND=83 AVERAGE FLOW RATES 0 W = F 4 7 G W 21.0 63.0 TOT DEPARTURES RWY TOT 00000000 DEPARTURES RWY RWY 000000000 3000000000 30000000000 RWY 27L 6.7 27.2 27.2 29.1 29.0 22554252 22554252 25554252 2555452 2555452 200.2 200.2 200.2 200.2 200.2 200.2 200.2 -18-1 -18-7 -18-7 -5-11-25-1 -5-11-25-1 20207240 DE-MAND 555.0 556.0 71.0 71.0 0.0 ••• R¥ CRS 000000000 ARRIVALS RWY RWY ARRIVALS RWY RWY 000000000 000000000 23.32 23.38 20.02 20.00 17.00 11.00 11.00 1100-1200 1200-1300 1300-1400 . 1500-1500 1500-1600 1700-1800 1800-1900 1100-1200 1200-1300 1300-1400 1500-1500 1500-1600 1700-1800 1900-1900 TIME

ROLL 4.70 14.13 21.66 35.60 25.39 22.69 22.69







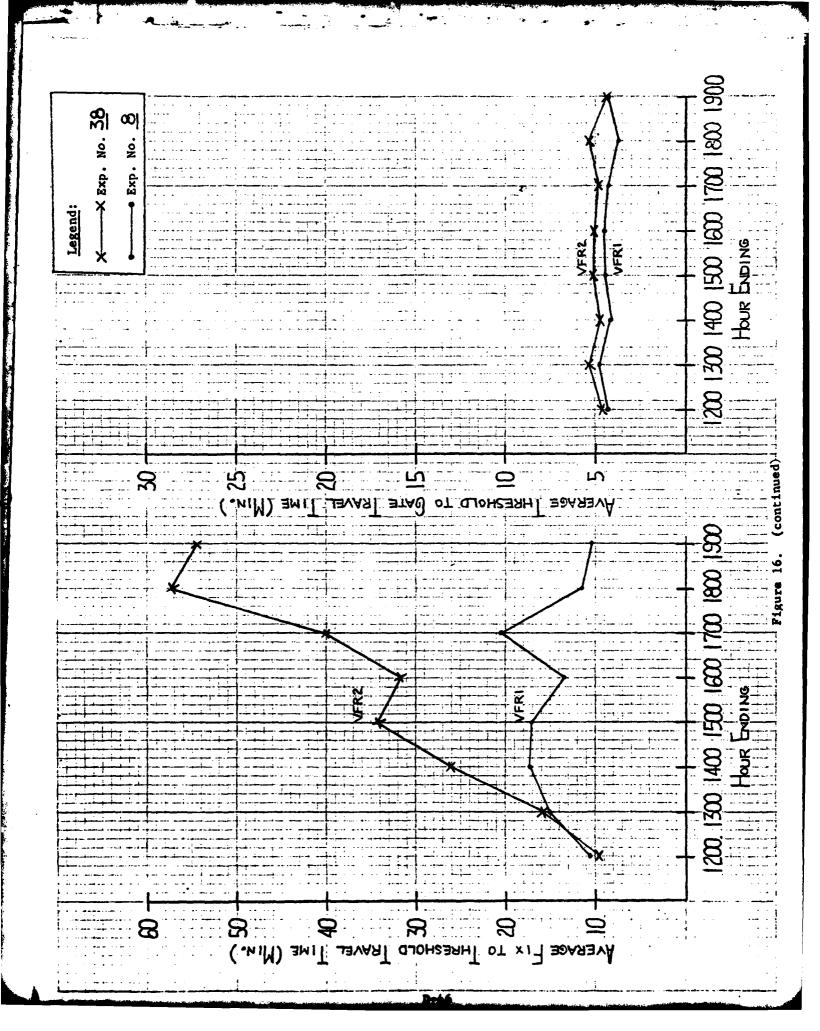


TABLE 22

SET - 4 DEMAND

IFR-WESTERLY FLOW

experiment number		RUNWAY 27R	RUNWAY 27L	RUNWAY 30	TOTAL
	ARRIVALS	155	109	0	264
5 AND 24	DEPARTURES	144	125	0	269
	TOTAL	299	234	0	533
	ARRIVALS	197	150	0	347
39	DEPARTURES	165 ·	167	0	332
	TOTAL	362	317	0	679
	ARRIVALS				
	DEPARTURES				
	TOTAL				
	ARRIVALS				
	DEPARTURES				
	TOTAL				
	ARRIVALS				
j	DEPARTURES				
	TOTAL				
	ARRIVALS				
. [DEPARTURES				
	TOTAL				
	ARRIVALS				
ļ	DEPARTURES				
	TOTAL				

EXPERIMENT NO. 5

Objective:

To obtain baseline delay estimates for the following runway configuration in IFR1 for 1978 demand:

Arrival Runways

Departure Runways

27L,27R

27L,27R

Related Comparison Experiments:

Prior experiment 2 examines this confiduration with VFR1 weather and 1978 demand.

Experiment 39 examines this configuration with IFR1 weather and 1983 demand.

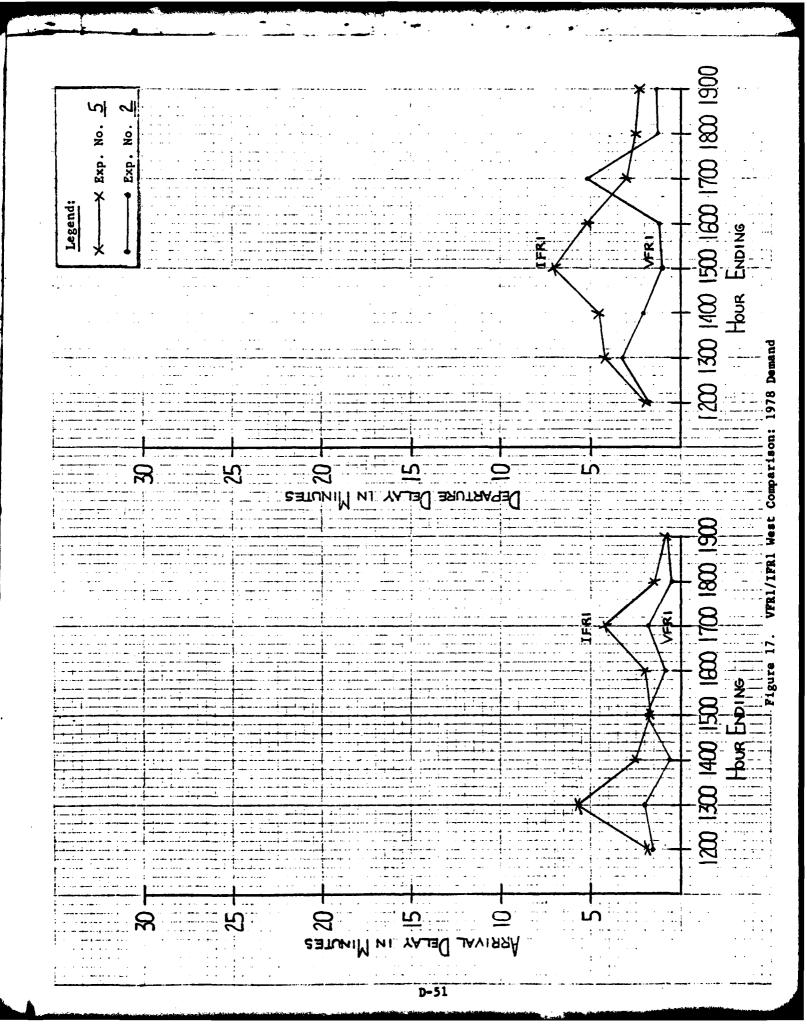
Experiment 24 examines this configuration with IFR1 weather, 1978 demand, and 2 mile in-trail staggered parallel approaches.

Data Package No. 5
Miami International Airport
Airport Improvement Task Force Delay Studies
February 1980

TABLE 23

EXPERIMENT 5 RESULTS

	TRAVEL		GATE TO	ROLL	5.79	8.18	8.41	11.56	10.41	6.78	5.39	6.10	3.22	TOTAL	DELAYS	DEP	DELAY	2.9	5.8	6.1	8.1	7.4	4.2	2.9	3.4	ιĊ					
	AVERAGE	TIME			4.36										AVERAGE	ARR	ELAY	1.9	6.1	2.5	1.7	2.7	4.4	1.6	1.2	0.0					
			FIX TO	THRESH	10.60	14.62	10.50	10.41	10.74	13,55	9.74	8.63	9.50				-														
							_									RWY	CNG	0.0	0.0	•			0.0	0.0	0.0	0.0					
			DIF		-1.4	-2	1.6	-2.9	4.0	-1.0	0.0	1	1.1			TAX	OUT	٥.	1.6	1.6	٥.	2.1	1:1	ស	1.1	•					
DEMAN			DE-	AND	15.0	36.0	43.0	34.0	21.0	31.0	37.0	31.0	0.6			RWΥ	CRS	•	•	•	•	•	•	•	•	0.0					
EXPER5 ROUTES=1978 CONFIG=B SEPAR=78IFR1 DEMAND=78		RES			13.6											10.		1.9	4.2	4 .	7.1	رة د	3.0	2.5	2,3	4					
R=781					0.0										TURES	RWY															
		PARTU	WY R		0.0	0.0	0.0	0.0	0:0	0.0	0.0	0.0	0:0		DEPAR																
FIG=B	ຜ	ם			0.0											RWYR		_							_						
8 CON	RATE				0,0								_				277 3														
=197	FLOW																27R 2														
5 ROUTES=1978	AVERAGE		3							16.9									7		3	27	_	4	4	11	^	4	7	CI	
			DIF		-3,3	•:	1:0	1	7	1	٠	•	ö	AVE		TAX	Z	7	4	7	÷	9.	ij	٠.	ņ	0:0					
XPER.			DE-	HAND	42.0	46.0	28.0	35.0	29.0	38.0	21.0	24.0	1.0			RWY	CRS	0.0	0.0	0.0	ċ	•	0.0	0.0	0.0	0.0					
AIRPORT		ARRIVALS	T07		38.7	46.5	29.0	34.1	31.7	37.1	21.9	24.0	1:0			TOT		1.8	, ,	ر. ري	1.7	5.0	4.2	1.5	₩.	0:0					
			⊁		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		Ŀs	⊁		0.0	0.0	0.0	0:0	0.0	0.0	0.0	0:0	0:0					
			7		0.0	0.0	0.0	0:0	0:0	•••	0.0	0.0	0:0		RRIVA	MY F		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0					
MIAMI INTER.		⋖			0.0										∢											0.0					
HIA			_		18.8		_			_	_	_	_			_										0.0					
			_			•••																									
			ZE ZE		19.9	•	•	•	•	•	•	•				3										0.0					
			TIME		1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900	1900-2000			TIME		1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900	1900-2000					



EXPERIMENT NO. 39

Objective:

The second secon

To assess the delay impact to aircraft in 1983 for the following runway configuration under IFR1 conditions, assuming no airport or ATC system improvements have been implemented:

Arrival Runways

Departure Runways

27L,27R

27L,27R

Related Comparison Experiments:

Prior experiment 5 serves and the 1978 demand level baseline for comparision to this experiment.

Data Package No. 5

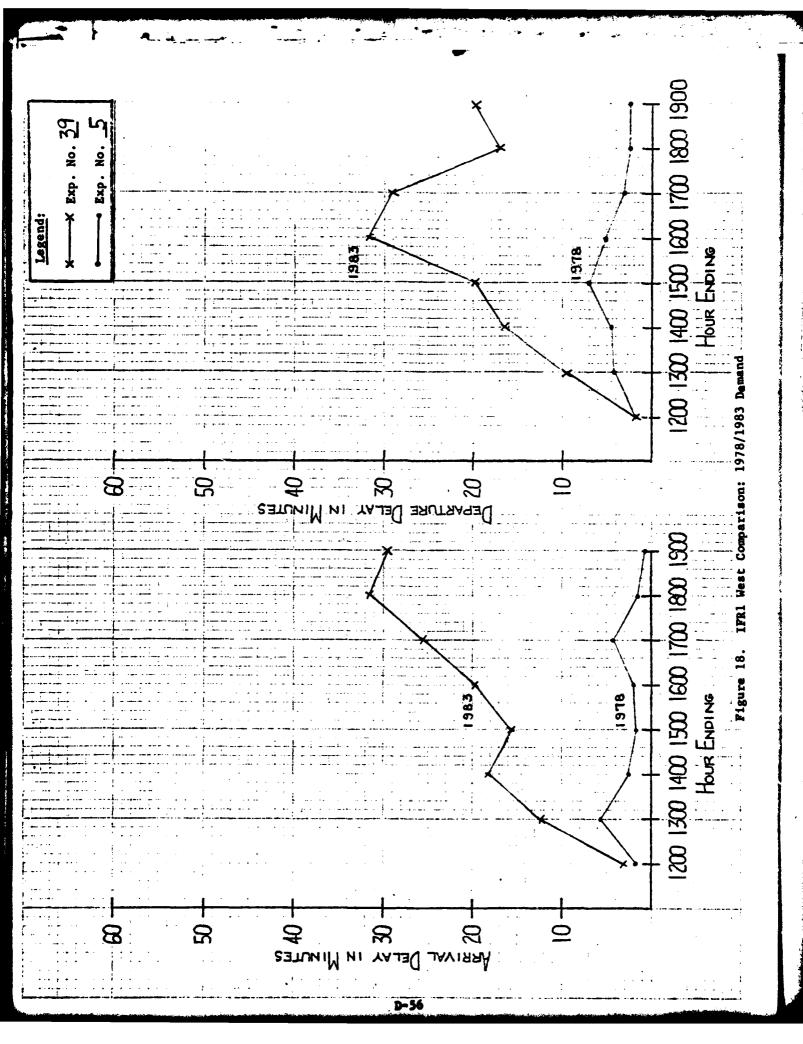
Niami International Airport
Airport Improvement Task Force Delay Studies
February 1980

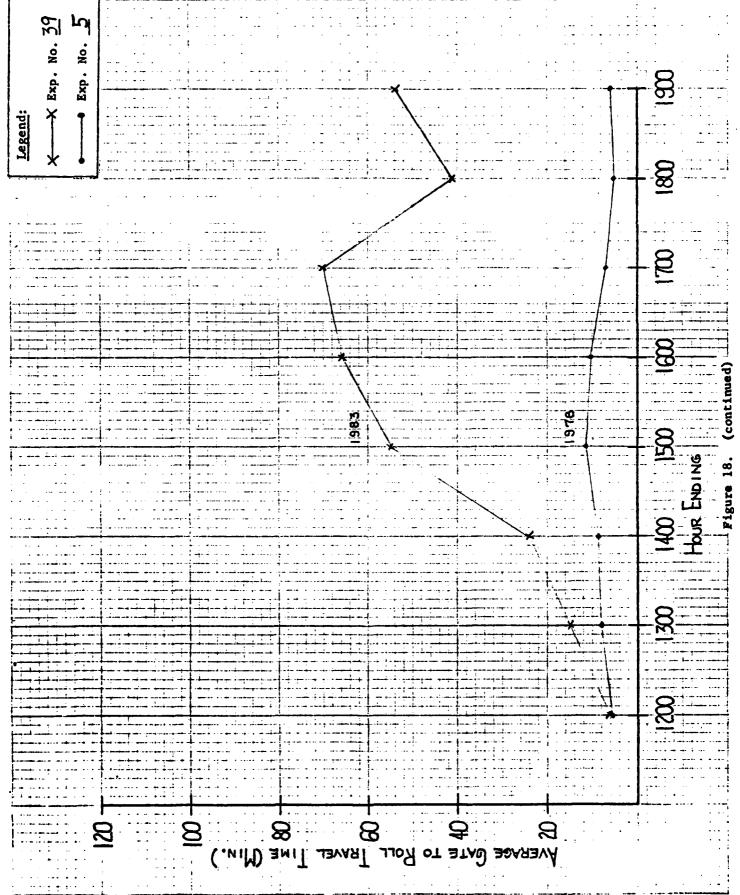
TABLE 24

EXPERIMENT 39 RESULTS

MIAMI INTER. AIRPORT EXPER.-39 KOUIES=1978 CONFIG-8 SEPAR-781FK1 DEHAND=83

	KAVEL		GATE TO												- 3	FOTAL .	DEL AYS	DEP	7 7 7	N.T.	e.	12.5	21.0	6.7.7	2 :	63.2	67.8	38.1		76.0
	AVENAUE	LIME	THRESH													GRAND	AVERAGE	ARR	F1 0 Y		4.5	13.7	19.3	07.0	4 (×.43	33.4	40.4	9.55	6.6
			FIX TO	THREST	12,39	100	2	.0.04	25.48	29.54	33.97	40.25	3.4.52		71.60					•										
1					4	· e) u	7	4	33	^	_	67	٠.	4			KΕΥ	CNS	} <	5	ö		เก			3.	13.	16.	41.5
			ŪΙF		Ŷ	0		1	`	ė,	-1:1	-31,	1		:			TAX	OUT			C!	4.1	27.8	9		35.0	7.7	15.2	11.5
			- E	ave ave	18,0	0.43			32.0	34.0	32.0	64.0	32.0		•			κWΥ	CRS	•	•	•	0	•	•	•		?	•	0.0
				_																										23.0
	5 30		. YWY															_ XMX												0.0
	11. C. C. C.	_	RWY R														₹	RWY R												0.0
	: :	3	KWY K		_	_	_		_	_	_	_	_	_				RWY		_		_	_	_	_		_	_	_	_
RATES			KWY Sec		_	_				_		_		_		2		₹ ₹					_	_						
FLOW															_	1														
			7 MY												á	ž		Κ¥	27	c	C	è	7	4	20	4	֡֞֝֞֝֞֝֞֝֓֓֓֞֝֞֜֝֓֓֓֓֞֝֓֓֓֓֓֡֝֞֜֜֓֓֓֓֞֜֜֡֓֓֡֓֡֓֡֓֡֝֡֓֡֓֡֡֝֡֓֡֓֡֡֡֡֓֡֡֝	a i	. 48	M Ci
AVERAGE		2 2 2	111		-10.4	4	3.9	1		C*/1-	33 1	2:1	-/.1	2	AUFR			¥	Z	•		•	- :		15,3	7			٠, د	6.
		Į,	MONT		00.00	54.0	39.0		•	2 .	41.0	0.47	0.87	0				3	CRS	0	•	•	•	•	•		•	?	•	0
		5	5		37.0	5	12.9	5	2	7	7.00	7	>	, Ci				<u> </u>												
	ES															ď													0	
	ARRIVALS	\ \))	0.0	0.0	0.0) (•	•	0.0		RRTUA		TWI LWI		0.0	0.0			•	0.0	0.0			٠ •	• •
	⋖		000													⋖				0	0.0				0	0.0			3	•
		•	27														٠													
			27K 2	-	-				-	•							_	_										٠		
		2	Ċ			•		•		•		•	•				ũ													
		7.1ME	!	1100-1200	3000	3051-00-1	1300-1400	1400-1500	1500-1400	1000-1200	200-1400	- OC - 1	7044 666	1700-2000			LIME		Ī	•	•	1.306-1400	1400-1500		3091-0001	1500-1700	1700-1860	1800-1600	000000000000000000000000000000000000000	7002-0011





EXPERIMENT NO. 24

Objective:

The second secon

To assess the delay impact to aircraft of using 2 mile in-trail, staggered parallel approaches for the following runway configuration under IFR1 conditions and 1978 demand:

Arrival Runways

Departure Runways

27L,27R

27L,27R

Related Comparison Experiments:

Prior experiment 5 serves as the 1978 demand level baseline for comparison to this experiment, wherein the conditions of this study case were identical except for the 2 mile in-trail, staggered parallel approach.

Data Package No. 5

Niami International Airport
Airport Improvement Task Force Delay Studies
February 1980

TABLE 25

EXPERIMENT 24 RESULTS

FULL FULL 5.94 10.55 16.14 27.15 35.99 40.60 33.69 DELAYS DEP DELAY 3.1 3.1 13.8 13.8 24.5 33.0 33.0 31.2 31.2 30.8 TRAVEL AVERAGE 1 TINE THRESH TO GATE 4.25 5.20 4.24 4.24 4.24 4.24 5.15 5.35 5.35 7.80 GRANTE AVERAGE D ARR DELAY 4.2 17.6 21.5 10.5 11.9 17.6 6.0 0.0 FIX TD THRESH 12.78 + 25.91 29.02 19.35 18.60 20.03 24.83 9.88 8.55 MIAMI INTER. AIRPORT EXPER.-24 ROUTES=1978 CONFIG=B SEPAR=78IFR1-STAG DEMAND=78 RWY CNG 000 000 1.7 1.7 20.3 17.1 11.68 12.33 12.33 13.41 15.41 15.41 15.41 15:0 34:0 31:0 31:0 9:0 PAND HAND 25.11 111.66 117.90 126.00 126 TOT DEPARTURES RWY RWY TOT 000000000 000000000 DEPARTURES RWY RWY 000000000 000000000 00000000 3000000000 AVERAGE FLOW RATES REY 27L 157L 121.0 121.7 122.0 100.9 AYS 2227 2227 10021 100411 1000111 111 7.9 322.3 526.9 10.9 10.5 RUY CRS 0.0 0.0 MAND 442.0 46.0 228.0 27.0 24.0 1.0 00000 ARRIVALS RWY RWY. 000000000 ARRIVALS RWY RWY Zm 000000000 7.01114010 0.044110 0.044110 0.044110 1100-1200 1200-1300 1300-1400 1400-1500 1500-1600 1600-1700 1700-1800 1800-1900 1100-1200 1200-1300 1300-1400 1400-1500 1500-1600 1400-1800 1800-1900 TIME

